YELAGINA, K.TS.

Fiftieth anniversary of D.I. Mendeleev's death. Vop. ist. est. i tekh. no.4:206-207 '57. (MIRA 11:1)
(Mendeleev, Dmitrii Ivanovich, 1834-1907)

FIGUROVSKIY, N.A.; YELAGINA, K.TS.

Aleksandr Abramovich Voskresenskii. Trudy inst. ist. est. i tekh. 18:213-235 '58. (MIRA 11:10)
(Voskresenskii, Aleksandr Abramovich 1809-1880)

YELAGINA, K.Ts.

Iulii Fedorovich Fritsshe. Trudy inst. ist. est. i tekh. 18: 236-260 '58. (MIRA 11:10)
(Fritsshe, IUlii Fedorovich 1808-1871)

YELAGINA, L. A.

"Investigation of the Phenomenon of Superplasticity of Alloys of Zinc With Aluminum." Cand Tech Sci, Moscow Aviation Technological Inst, Min Higher Education USSR, Moscow, 1955. (KL, No 10, Mar 55)

SO: Sum. No. 670, 29 Sep 55--Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (15)

S/762/61/000/000/003/029

AUTHORS: Glazunov, S.G., Yelagina, L.A., Kotova, V.I.

TITLE: Alloys of the titanium-silicon and titanium-aluminum-silicon system.

SOURCE: Titan v promyshlennosti; sbornik statey. Ed. by S.G.Glazunov. Moscow, 1961, 41-72.

TEXT: This experimental report adduces the results of an investigation of the mechanical properties at 20-800°C, the phase composition, and the structure of Ti-Si alloys with up to 4.5% Si and Ti-6Al alloys with up to 2.5%Si. The objective of the investigation was a determination of possible means for increasing the strength of Ti-Si and Ti-Al-Si alloys through heat treatment and, ultimately, to find high-strength and high-temperature alloys with acceptable ductility. The basic problem is to reconcile the presence of the hardening intermetallic compounds with adequate ductility. This has already been achieved in Ti-13Sn-2.5Al alloys. Reference is made to D.A.Sutcliffe's findings (Revue de Metallurgie, no.3, 1954, 524) on the desirable effect of Si-Ti intermetallic compounds on the high-temperature (HT) strength and fusion resistance of Ti. Sutcliffe and M.Hansen et al. (Trans. ASM, v.44, 1952, 518) have commented on the hardenability of Ti-Si alloys by heat treatment which, according to P.D.Frost (J. of Metals, v.8, no.1, 1956,

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35-42) can be attributed to intermetallic segregations. In addition to the alloys Ti-(0.03-4.5)Si and Ti-6Al-(0.02-2.5)Si, tests were made of Ti-6Al-2.5Si-(0.5-1.0)Cu and Ti-6Al-2.5Si-2Sn alloys (composition detailed in two full-page tables). The reason for the great number of binary alloys in the region near 0.5% Si is the need for an accurate determination of the effect of Si on the notch-toughness which, according to Sutcliffe, drops most sharply in that particular concentration interval. The invariable Al concentration in the ternary Ti-Al-Sn alloys was selected as great as possible without incurring the formation of the ductility-reducing α_2 phase. The introduction of the Cu and Sn into the most HT-resistant of the ternary alloys, Ti-6Al-2.5Si, was motivated by a hope to improve its HT characteristics without any impairment in ductility. The preparation of the base materials is described in detail. 4-6 specimens of each composition were tested, and the mean result is reported. Hardness tests were performed with a 5-mm diam ball and a 750-kg load after removal of a 3-4-mm thick, possibly oxidized, surface layer. Phase composition was determined by X-ray spectroscopy; Debyegrams were taken. Results: (1) Binary Ti alloys with more than 0.5% Si and ternary alloys with more than 1% Si can be hardened by quenching and aging. The maximum attainable through heat treatment of Ti-Si alloys (2.5% Si) is 30-31 kg/mm^2 and of Ti-6Al-Si (2.5% Si) 15-18 kg/mm^2. (2) Quench-hardened alloys of the Ti-6Al-Si system with an elevated (2 to 2.5%) Si content are equal in HT characteristics to the BT10 (VT-10) and BT9

(VT9) alloys; however, the alloys investigated are less ductile and do not excel in the stability of their properties. (3) The hardening achieved by quenching appears to be a result of the formation of a Si-supersaturated solid α' solution (attributed to a suppression of the eutectoid transformation) and the inception of its decomposition, whereas the sharp increase in brittleness upon tempering is a result of the further segregation of the intermetallic compound Ti_5Si_3 and the unfavorable disposition of its particles predetermined by the oriented $\beta \rightarrow \alpha$ transformation. (4) The silicon increases the temperature of recrystallization of the titanium. The good HT characteristics, the relatively low specific gravity, and the ample availability of the alloying elements of Ti-Al-Si alloys justify the conclusion that alloys of this system will become suitable for casting, provided that their properties are sufficiently stabilized. There are 18 figures, 8 tables, and 3 English-language references.

ASSOCIATION: None given.

S/762/61/000/000/005/029

AUTHORS: Yelagina, L.A., Lashko, N.F.

TITLE: Decomposition of the β phase in alloys of the titanium-chromium-aluminum system containing 7% (Cr+Al).

SOURCE: Titan v promyshlennosti; sbornik statey. Ed. by S.G.Glazunov. Moscow, 1961, 79-84.

TEXT: The experimental investigation reported in this paper was performed to study the process of the aging decomposition of the metastable solid-solution (SS) β phase formed by quenching a Ti alloy with 7% Cr and to clarify the nature of their hardening and the reason for the brittleness evoked by the accompanying formation of a metastable ω phase. The alloys were prepared from sponge Ti Ti00, Al A00, and electrolytical chromium. 3-kg ingots, 120-mm diam, were cast (chemical compositions tabulated). Test rods 14x14 mm were forged at 950-1150°C (depending on composition) and cut into test specimens 20-25 mm long. Tests were made for H_V, microstructure, and phase composition of the alloys in three states: (a) After 2-hr tempering at 650° and cooling in the furnace; (b) after water quench from 1,000° (30 min); (c) after quench per (b) and 450° aging with various soaking times (according to P.D.Frost, et al., Trans.ASM, v.46, 1954, 231). Tempering at 450° with aging yields maximum hardening with a Ti-7.5Cr alloy. Tempering increases the H_V with increasing Al and decreasing Cr content. Quenching increases the hardness of alloys with 7-2%Cr and 0-5%Al, does not affect that of the Ti-1Cr-

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6Al alloy and lowers that of Ti with 7% Al. Quenching of Ti with 7% Cr from 1,000° nearly doubles the hardness obtaining after tempering (HV=478 vs. 250), but its notch toughness is very low (0.3 kgm/cm^2). Aging of Ti with 7% Cr at 450° does not affect its hardness during the first 15 min, but subsequently reduces it appreciably. The results of X-ray metallography after various heat treatments are tabulated. After water quenching from 1,000° Ti alloys with 7% (Cr+Al), a metastable ω phase was fixed jointly with the β phase in only two cases, namely, with 0 and 0.87% Al. In the other alloys investigated under quenching a metastable α' phase was formed. 15-min aging of quenched Ti-Cr-Al at 450°C led to a sharp increase (450 or more) H_V without altering its phase composition qualitatively. It follows that the hardening attainable by tempering of Ti-7(Cr+Al) alloys containing 1.7% and more Al is attributable, apparently, to an incipient stage of decomposition of the metastable α' phase which cannot be fixed by X-ray metallography. Following quenching a Ti-7Cr alloy consists of large grains of pure β phase, whereas ternary alloys containing less than 6% Cr manifest an acicular α'-phase structure, and the Ti-6Cr-1Al alloy contains conjointly grains of β phase, ω phase, and regions of large acicular α' phase. The coexistence of ω and α phases in a ternary alloy of the Ti-Cr-Al system is of especial interest, since in binary alloys of Ti with transition metals the appearance of an α phase, as a rule, coincides with the disappearance of the ω phase. There are 3 figures, 3 tables, and the 1 English-language reference cited above.

ASSOCIATION: None given.

Card 2/2

ACCESSION NR: AP4040690 S/0129/64/000/006/0023/0027

AUTHOR: Yelagina, L. A.

TITLE: composition and structure of Ti-Alloy ingots in the pipe area

SOURCE: Metallovedeniye i termicheskaya obrabotka metallov, no. 6, 1964, 23-27

TOPIC TAGS: welding, pipe, hot deformation, Ti alloy, crystallization range, cell oxidation, chemical inhomogeneity

ABSTRACT: To shorten the time required for the welding of primary pipes, the author considered the possibility of doing so in the process of hot deformation. For that purpose "VT1", "VT5" and "VT15" alloys ingots with a diameter of 380 mm and Ti03.5 Al-Mn and Ti-Ni ingots with a diameter of 200 mm were investigated. (V.I. Dobatkin was in charge of the project. L.P. Yevdokhina, A.M. Legkodukh and N.S. Goncharik participated in the investigations.) In Ti-specimens with a rather small crystallization range (40 to 80C) and concentrated closed pipes, the changes in the structure and hardness of the pipe area were negligible. In Ti-specimens with 8-20% Ni having a wide

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ACCESSION NR: AP4040690

crystallization range, scattered-type pipes usually form and individual cells may emerge to the surface. There is always the possibility of the oxidation of the cells directly exposed to the arc-furnace atmosphere preventing the welding of the pipes. These specimens are also characterized by a conspicuous chemical inhomogeneity. The orig. art. has: 4 tables and 2 figures.

SUBMITTED: 00 ENCL: 00

SUB CODE: MM NR REF SOV: 001 OTHER: 000

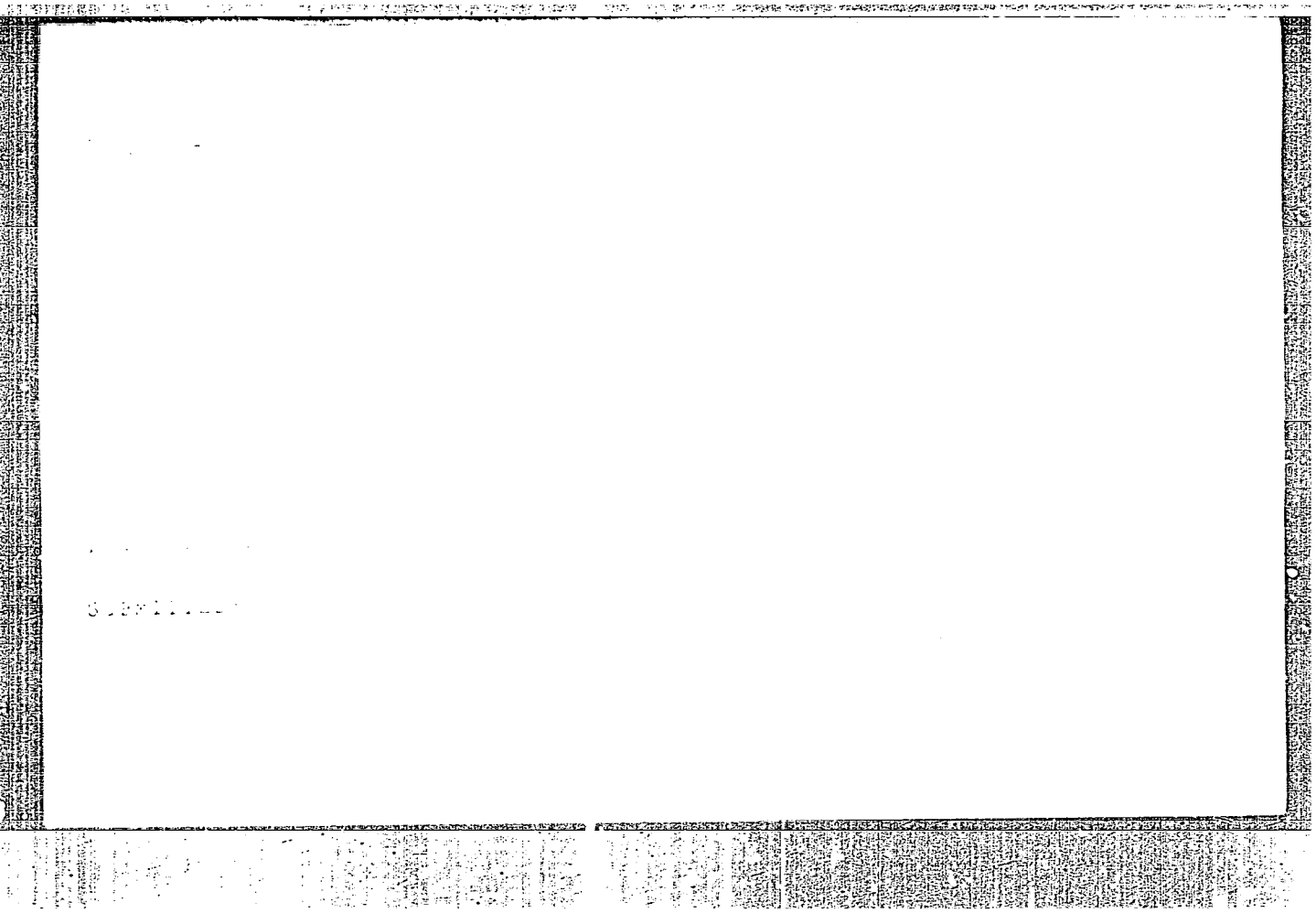
ASSOCIATION: none

2/2

Card

TITLE: Thermomechanical treatment of VT3-1, VT8, and VT14 titanium

Card 1/2



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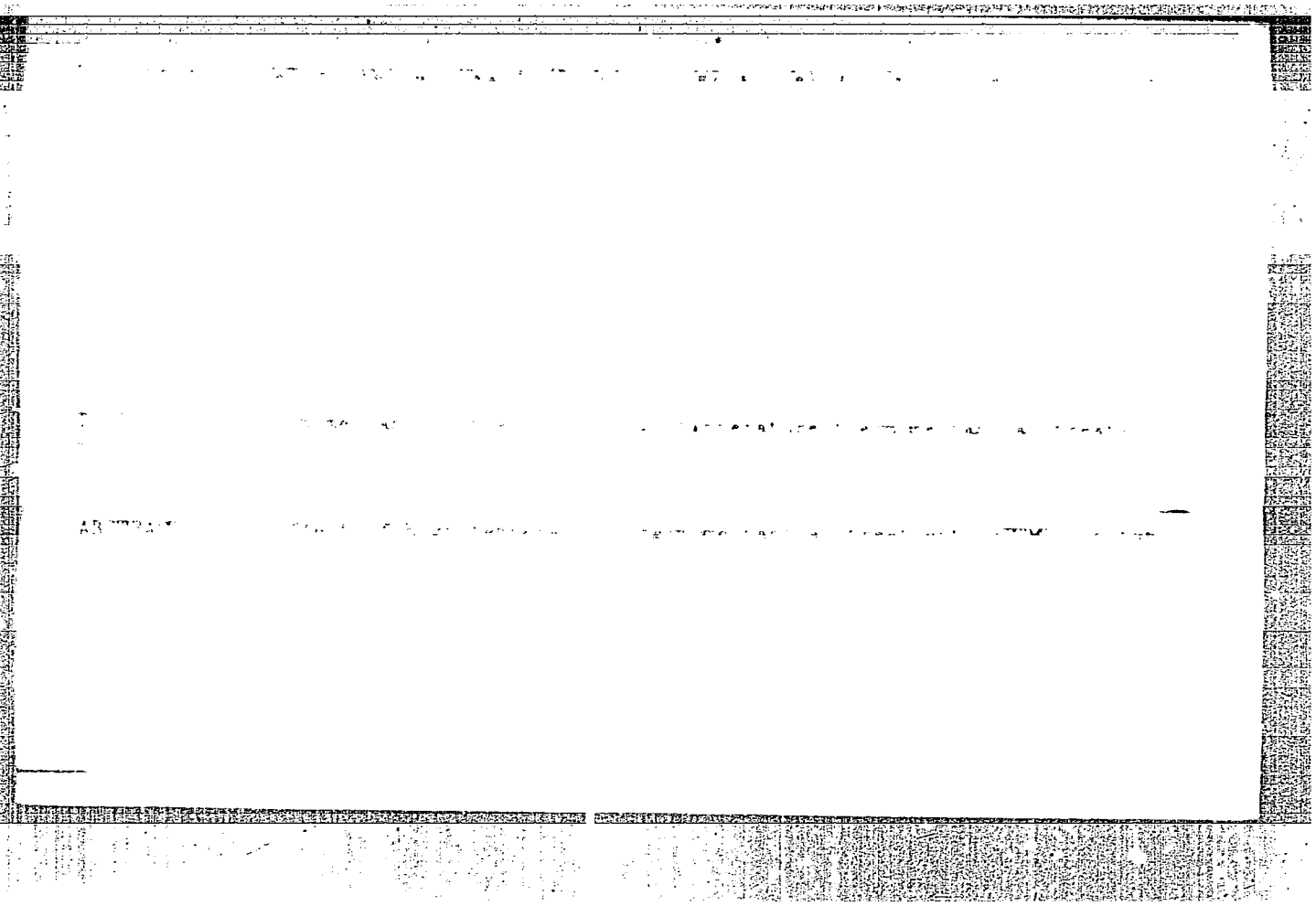

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L 16330-66 EWT(m)/EWP(w)/T/EWP(t)/ETI/EWP(k) IJP(c) JD/HW

ACC NR: AP6017657 (N) SOURCE CODE: UR/0136/66/000/001/0078/0083

AUTHOR: Yelagina, L. A.; Gel'man, A. A.

ORG: none

TITLE: Effect of structure on the strength of pressed rods of VT3-1 alloy

SOURCE: Tsvetnyye metally, no. 1, 1966, 78-83

TOPIC TAGS: titanium alloy, metal pressing, metal deformation / VT3-1 titanium alloy

ABSTRACT: An attempt was made to determine the conditions of deformation required for obtaining rods of industrial titanium alloy VT3-1 (approximate composition, %: 5 Al, 2 Mo, 2 Cr, 0.2 Si, 0.3 Fe) having a recrystallized structure, i.e., a structure obtained by deformation in the ($\alpha+\beta$) region, and to estimate the hardening after quenching and aging of specimens of various initial structures. A standard heat treatment of these specimens (quenching from 850°C, 30 min, and aging for 5 hr at 550°C) produced the same hardening in all cases. Analysis of the structure of quenched specimens nonrecrystallized in the initial state showed that recrystallization occurred during quenching. The retained strength level of nonrecrystallized specimens after quenching and aging according to various schedules was always higher than that of specimens with initial recrystallized grain of the transformed β phase. This is attributed to a partial retention of work hardness. It is concluded that the lack

Card 1/2 UDC: 669.295-126:620.18

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ACC NR: AP6017657

of recrystallization during quenching promotes the retention of a higher strength after the hardening heat treatment as compared to the recrystallized quenched state; furthermore, the difference in the strength of quenched and aged specimens of different structure is the same as in the initial state (or even less), indicating the absence of additional hardening of nonrecrystallized specimens during quenching. Thus, the hardening after quenching and aging of specimens of different structure is the same. No press effect was observed in the VT3-1 alloy during pressing under industrial conditions. Orig. art. has: 3 figures.

SUB CODE: 11/ SUBM DATE: none/ ORIG REF: 003

Card 2/2 fv

YELAGINA, L.G.

Optical instrument for measuring turbulent humidity pulsations.
Izv.AN SSSR.Ser.geofiz. no.8:1100-1107 Ag '62. (MIRA 15:8)

1. Institut fiziki atmosfery AN SSSR.
(Hygrometry)

ACCESSION NR: AP4007810 S/0049/63/000/012/1859/1865

AUTHOR: Yelagina, L. G.

TITLE: The measurement of spectra frequencies of absolute himidity pulsations in the surface boundary layer of the atmosphere

SOURCE: AN SSSR. Izvestiya. Seriya geofizicheskaya, no. 12, 1963, 1859-1865

TOPIC TAGS: meteorology, turbulence, himidity spectrum pulsation frequency, surface boundary layer, boundary layer humidity spectra, optical sensor, optical probe, light scattering pulsation, pulsation spectral density

ABSTRACT: An optical dovice based on the absorption of water vapor in the neighborhood of 1.38 microns was used to measure humidity pulsations. The device was previously described by the author (Opticheskiy pribor dlya izmereniya turbulentny*kh pul'satsiy vlazhnosti, Izv. AN SSSR, ser. geofiz., No. 8, 1962). To obtain the pulsation spectra this instrument was combined with a low-frequency spectral analyzer (L. R. Tsvang. Izmereniya chastotny*kh spektrov temperaturny*kh pul'satskiy v prizemnom sloye atmosfery*. Izv. AN SSSR, ser. geofiz., No. 8, 1960). By means of these instrument the author has obtained the spectra of humidity

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ACCESSION NR: AP4007810

pulsations in the frequency interval 0.01-1.5 cycles, while measuring the absolute humidity from 7 to 18 millibars. The upper boundary of the investigated frequency interval was determined by the optical instrument, the lower by the spectral analyzer. The nature of the change in spectral density of pulsation energy in the frequency interval 0.01-1.5 cycles approaches the law $-\frac{5}{3}$ (i.e., it is proportional to $f^{-\frac{5}{3}}$). The spectral density of pulsation energy normalized to e^{-2} increased by a factor of about 10 during change from positive Ri to negative (from Ri = 0.04 to Ri = -0.1) and by a factor of about 2 during change from Ri = -0.1 to Ri = - 0.2. (Ri is the Richardson number.) The investigated frequency interval did not span the full energy of pulsations of absolute humidity. It is possible that a considerable part of the pulsation energy belongs in the region below 0.01 cycle. The average value of the relative pulsation of absolute humidity belonging in the interval 0.01-1.5 cycles amounts to 2%. The full value must be greater. "The author expresses his thanks to L. R. Tsvang for advice and aid in making the measurements and handling the results, and also to V. I. Gorshkov for his participation in the work." Orig. art. has: 8 figures and 1 table.

ASSOCIATION: Akademiya nauk SSSR Institut fiziki atmosfery* (Academy of Sciences SSSR Institute of Physics of the Atmosphere)

SUBMITTED: 23Jan63 DATE ACQ: 20Jan64 ENCL: 00

SUB CODE: AS NO REF SOV: 003 OTHER: 002

Card 2/2

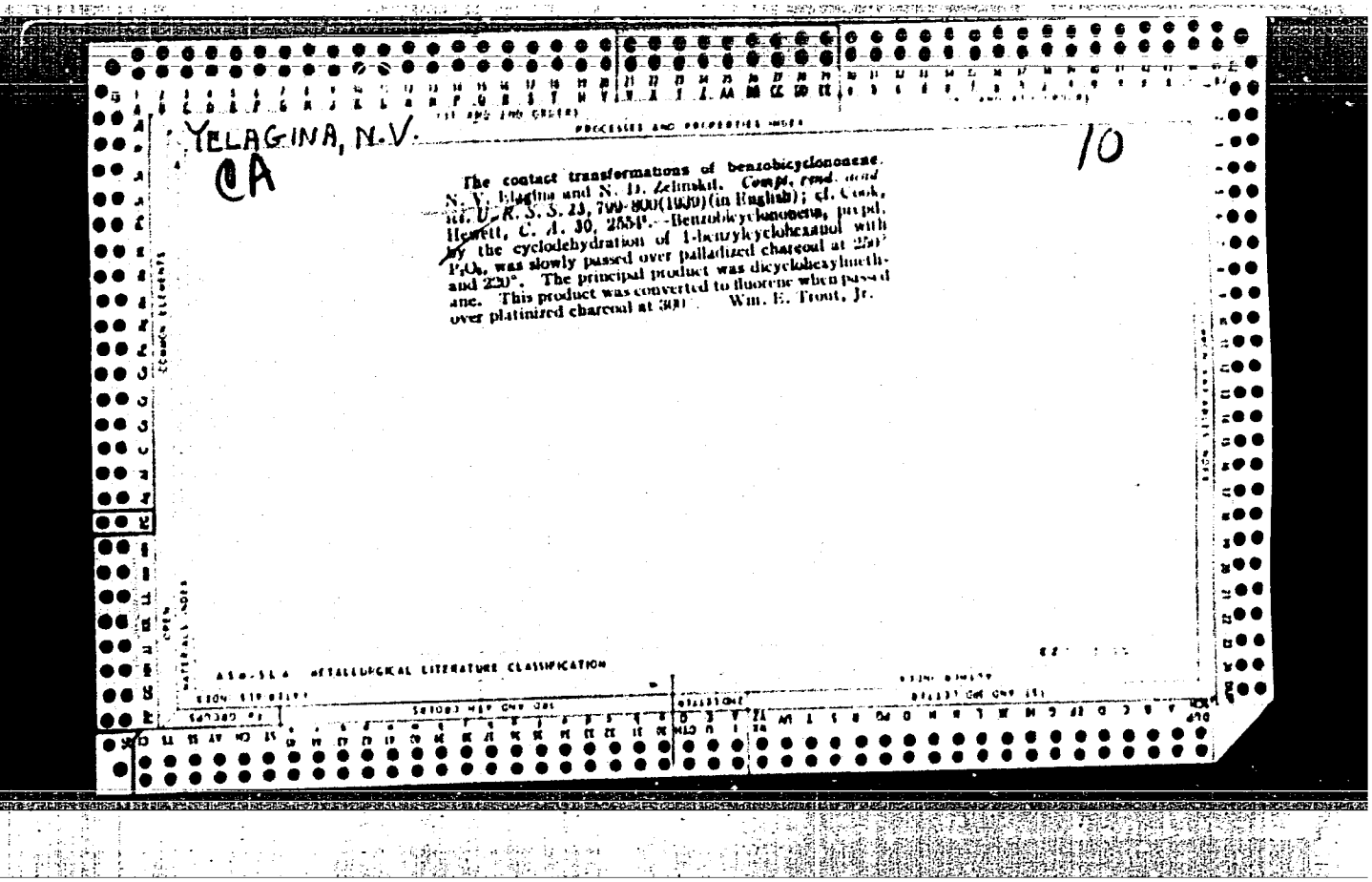
TITLE: Measurement of the frequency spectra of absolute humidity fluctuations in the sur-

[redacted] on a 12 m mast. It was possible

YELAGINA, L. V.; MALYSHEVA, R.A. and CHTETSOVA, V.M.

"The C. F. T. with the Toxoplasmosis Antigen in Cases of Anomalies of Development of the Fetus and with Certain Types of Obstetric Pathology"

Voprosy toksoplazmoza, report theses of a conference on toxoplasmosis, Moscow, 3-5 April 1961, publ. by Inst Epidemiology and Microbiology im. N. F. Gamaleya, Acad. Med. Sci USSR, Moscow, 1961, 69pp.



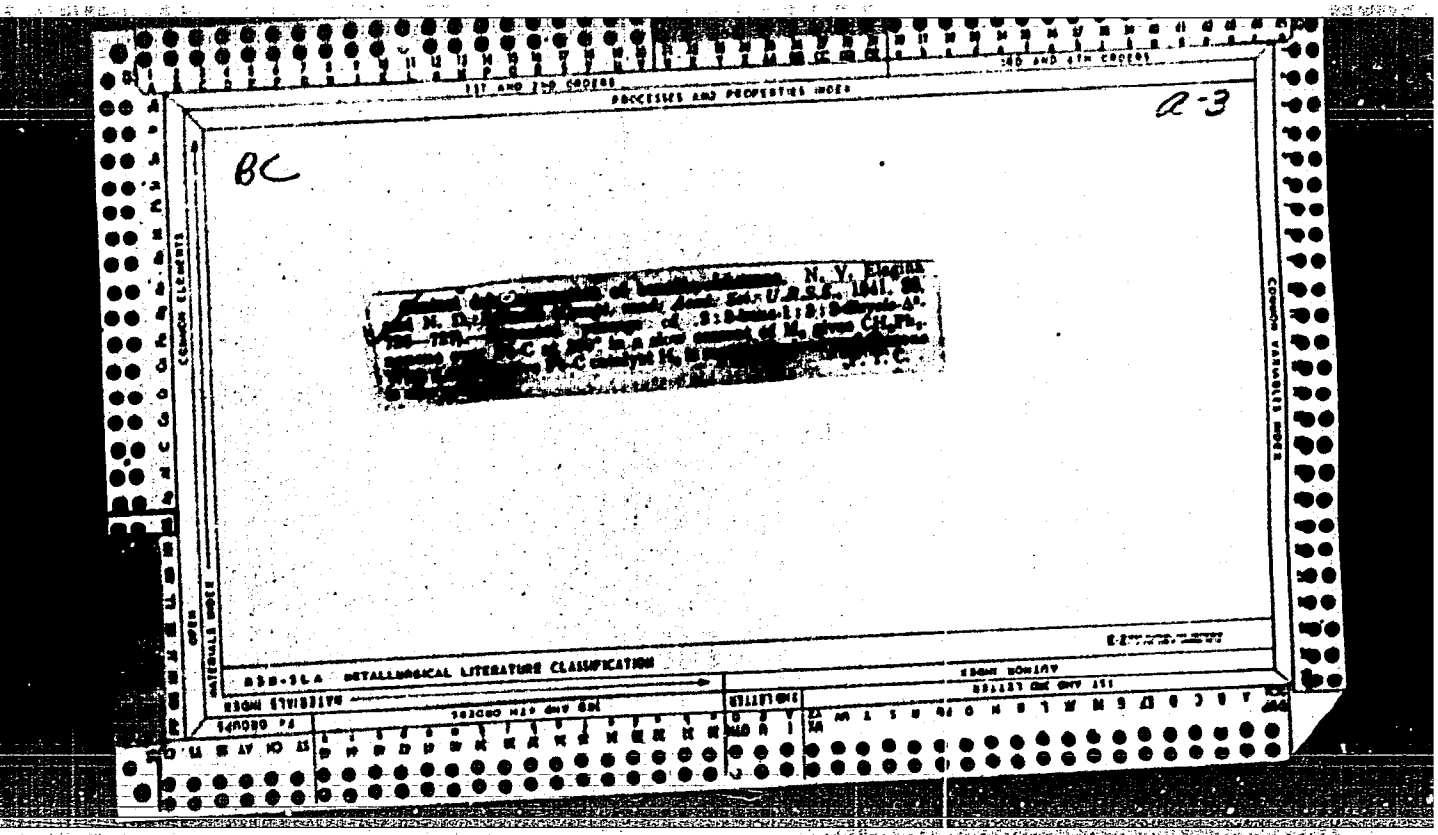
YELAGINA, N.V.

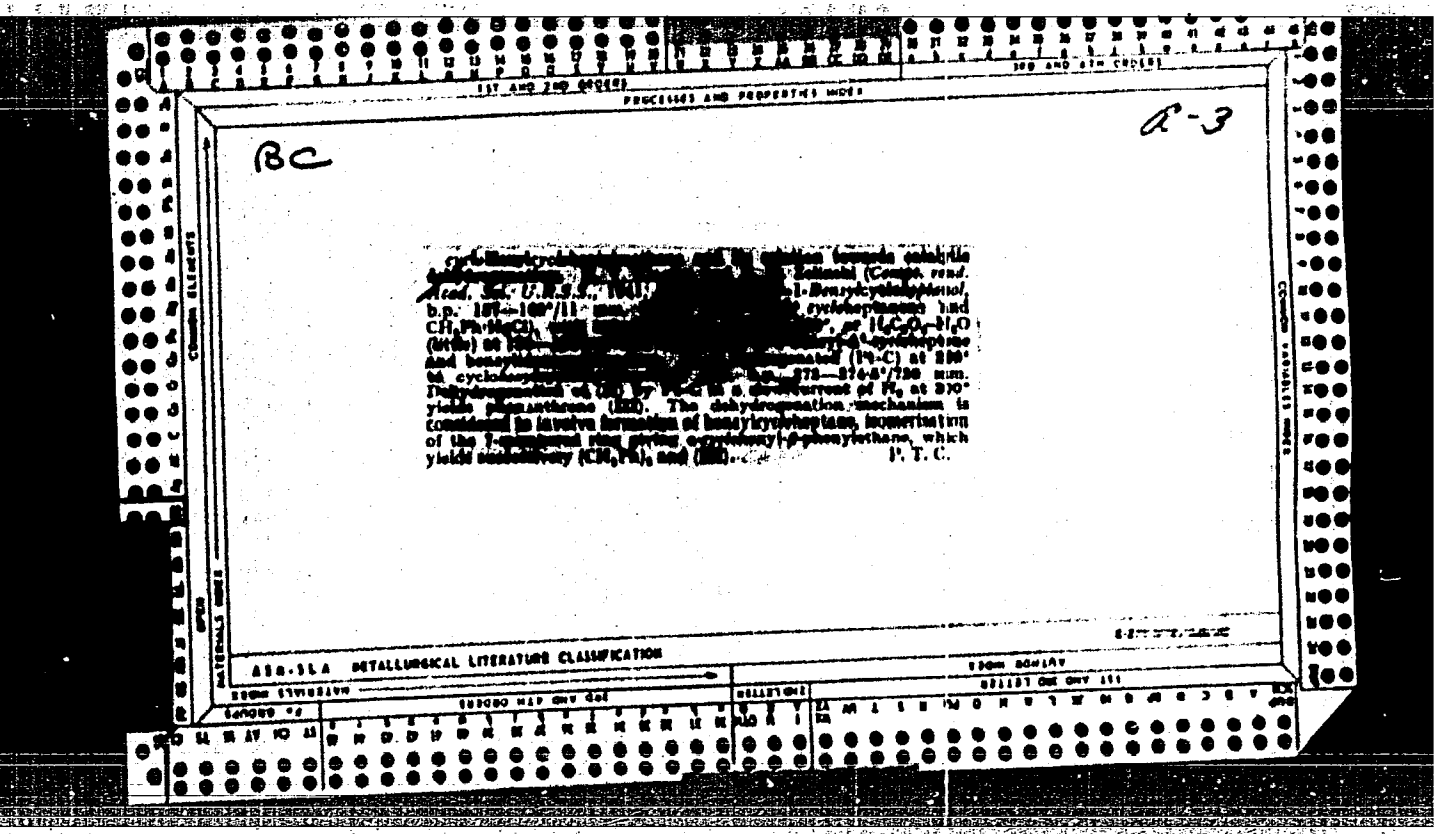
CA

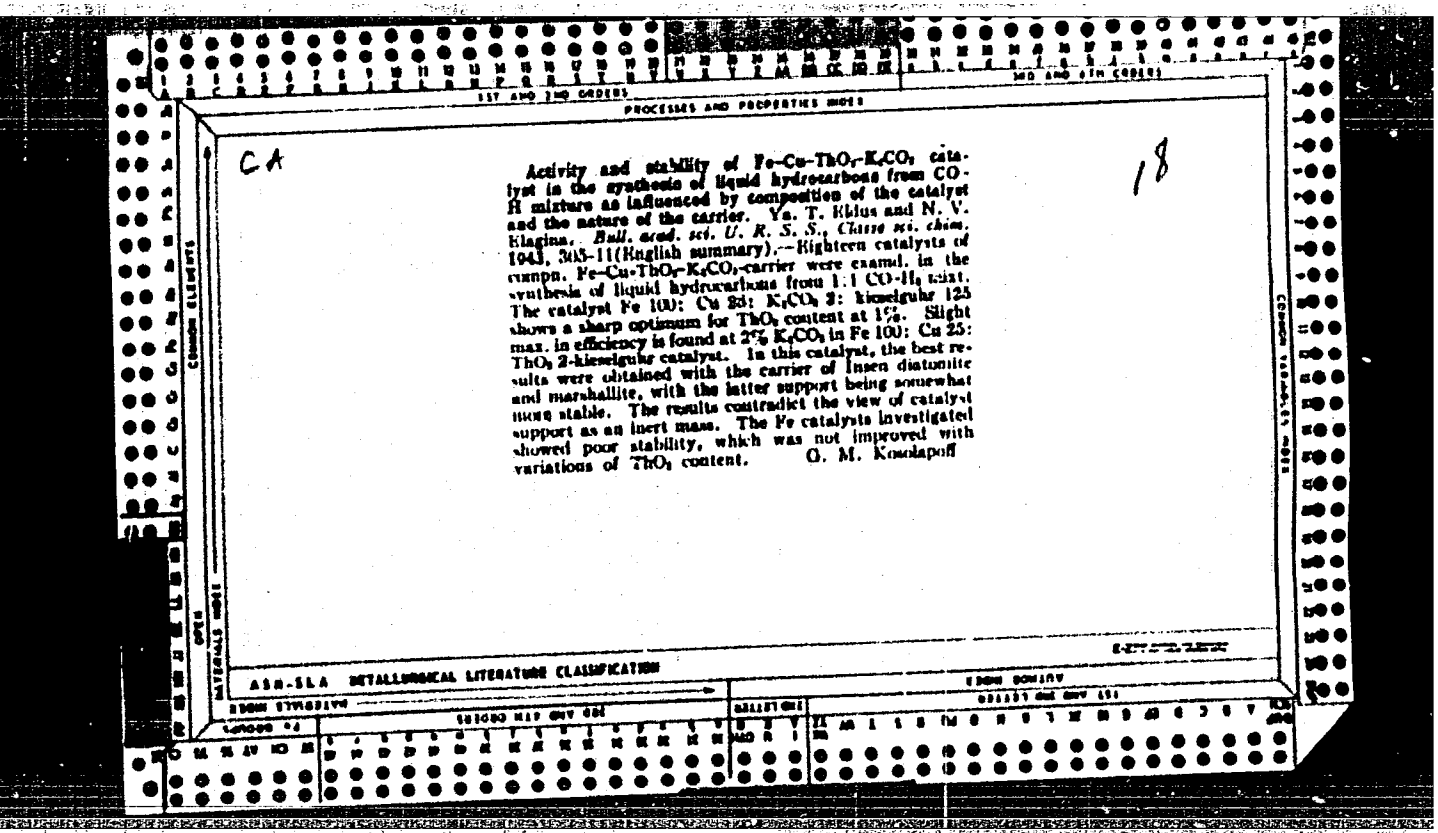
10

The contact transformations of benzobicyclononane. N. V. Yelagina and N. D. Zelinskii. *Compt. rend. acad. sci. U. R. S. S.* 23, 799-800(1939)(in English); cf. Cook, Hewett, *C. A.* 30, 2554⁹.—Benzobicyclononene, prepd. by the cyclodehydration of 1-benzylcyclohexanol with P_2O_5, was slowly passed over palladized charcoal at 250° and 220°. The principal product was dicyclohexylmethane. This product was converted to fluorene when passed over platinized charcoal at 300°. Wm. E. Trout, Jr.

A50-51A METALLURGICAL LITERATURE CLASSIFICATION







CA

18

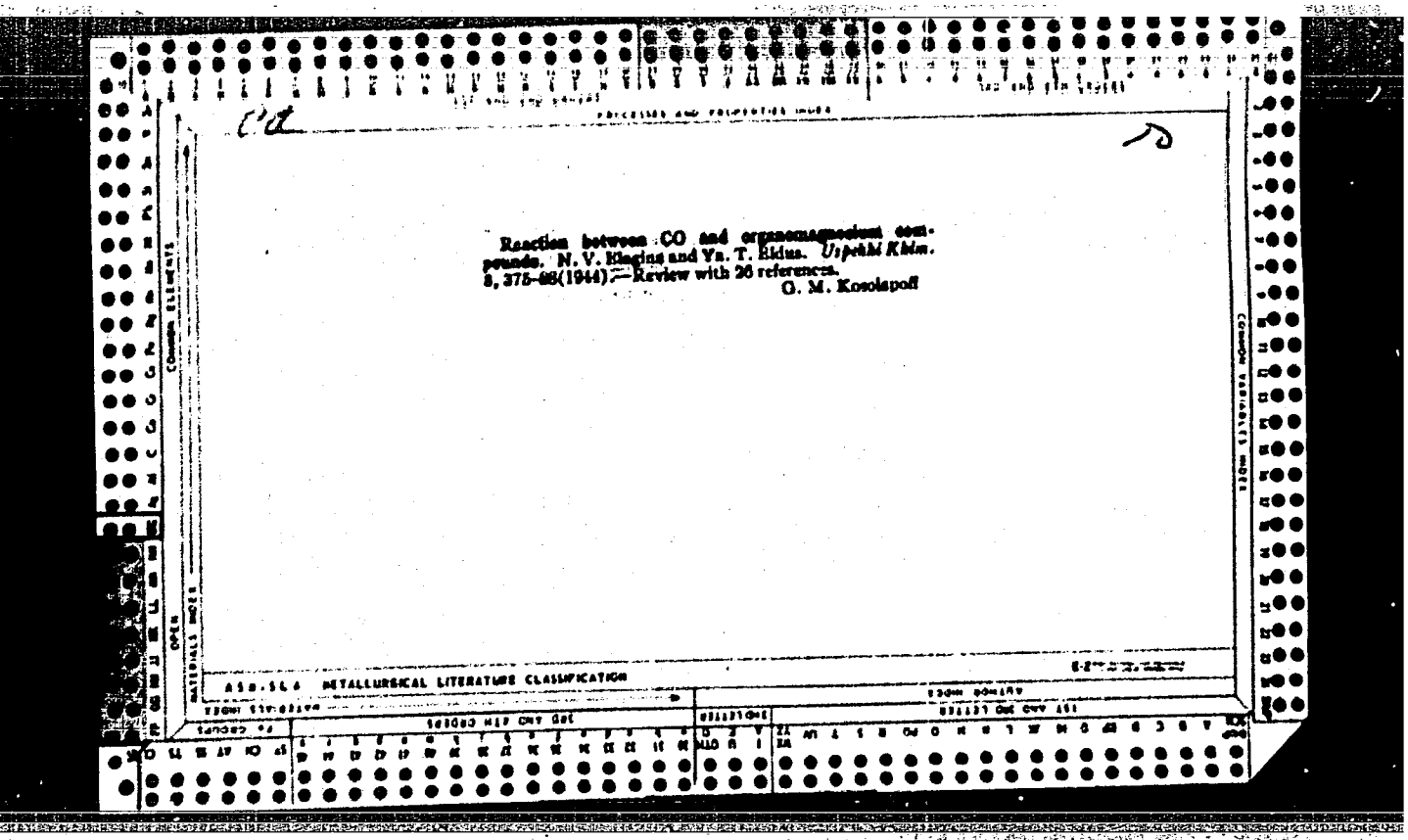
Activity and stability of Fe–Cu–ThO_2–K_2CO_3 catalyst in the synthesis of liquid hydrocarbons from CO-H mixture as influenced by composition of the catalyst and the nature of the carrier. Ya. T. Elius and N. V. Klagina. *Bull. acad. sci. U. R. S. S., Classe sci. chim.* 1943, 305-11(English summary).—Eighteen catalysts of compn. Fe–Cu–ThO_2–K_2CO_3-carrier were examd. in the synthesis of liquid hydrocarbons from 1:1 CO-H_2 mixt. The catalyst Fe 100: Cu 25: K_2CO_3 2: kieselguhr 125 shows a sharp optimum for ThO_2 content at 1%. Slight max. in efficiency is found at 2% K_2CO_3 in Fe 100: Cu 25: ThO_2 2-kieselguhr catalyst. In this catalyst, the best results were obtained with the carrier of Insen diatomite and marshallite, with the latter support being somewhat more stable. The results contradict the view of catalyst support as an inert mass. The Fe catalysts investigated showed poor stability, which was not improved with variations of ThO_2 content. O. M. Kvasnapoff

YELAGINA, N. V.

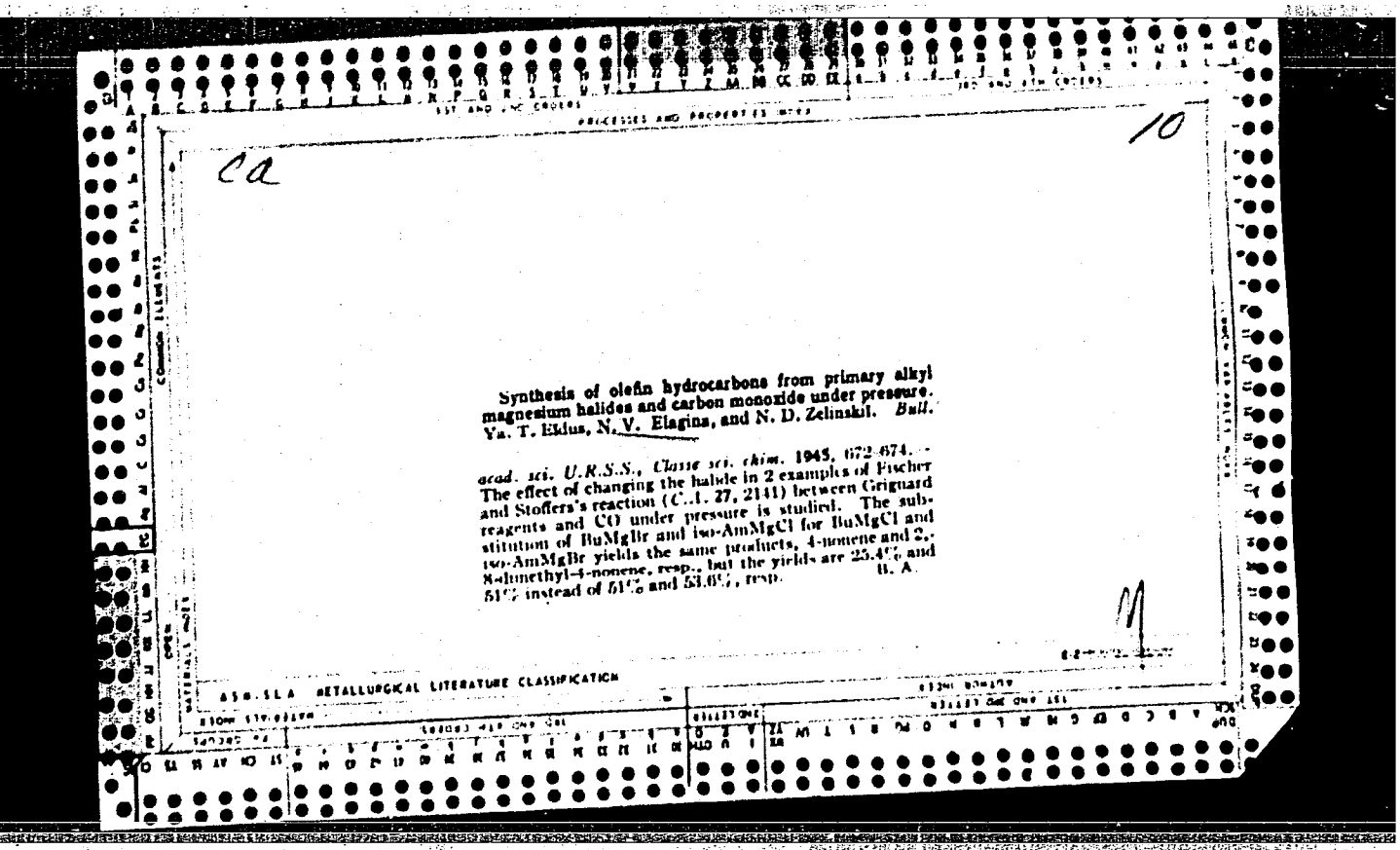
Mbr., Inst. Organic Chemistry, Dept. Chem. Sci., Acad. Sci., -1943-.

"On Activating Effect of Certain Metal Oxides on Fe-Cu-Contact, Used in the Synthesis of Gasoline from Water Gas," Iz. Ak. Nauk SSSR, Otdel. Tekh. Nauk, No. 2, 1943;

"Activity and Stability of Fe-Cu-ThO2-K2CO3-Catalyst in the Synthesis of Liquid Hydrocarbons from CO -- H2 Mixture as Influenced by Composition of Contact and Nature of Carrier," ibid., No. 4, 1943.



Reaction between CO and organomagnesium compounds. N. V. Kinglns and Ya. T. Eldus. *Uspekhi Khim.* 8, 375-88(1944).—Review with 26 references.
O. M. Kosolapoff



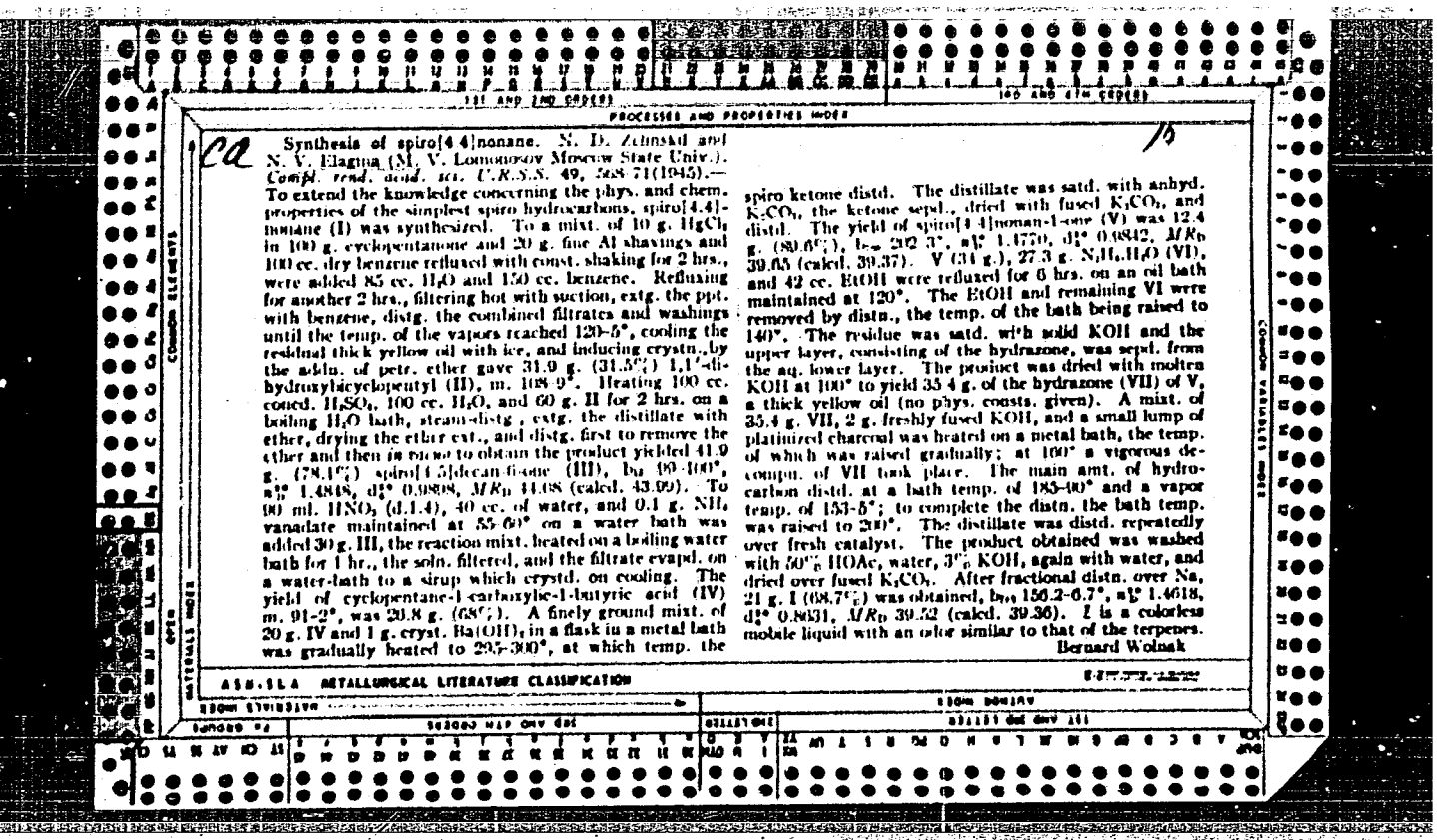
Ca

10

Synthesis of olefin hydrocarbons from primary alkyl magnesium halides and carbon monoxide under pressure. Ya. T. Eldus, N. V. Elagina, and N. D. Zelinskii. *Bull. acad. sci. U.R.S.S., Classe sci. chim.* 1945, 672-674. The effect of changing the halide in 2 examples of Fischer and Stoffers's reaction (C.A. 27, 2141) between Grignard reagents and CO under pressure is studied. The substitution of BuMgBr and iso-AmMgCl for BuMgCl and iso-AmMgBr yields the same products, 4-nonene and 2,8-dimethyl-4-nonene, resp., but the yields are 25.4% and 51% instead of 51% and 53.6%, resp. H. A.

11

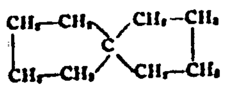
ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



Synthesis of spiro[4.4]nonane. N. D. Zelinskii and N. V. Elagina (M. V. Lomonosov Moscow State Univ.). *Compt. rend. acad. sci. U.R.S.S.* 49, 568-71(1945).—To extend the knowledge concerning the phys. and chem. properties of the simplest spiro hydrocarbons, spiro[4.4]-nonane (I) was synthesized. To a mixt. of 10 g. $HgCl_2$ in 100 g. cyclopentanone and 20 g. fine Al shavings and 100 cc. dry benzene refluxed with const. shaking for 2 hrs., were added 85 cc. H_2O and 150 cc. benzene. Refluxing for another 2 hrs., filtering hot with suction, extg. the ppt. with benzene, distg. the combined filtrates and washings until the temp. of the vapors reached 120–5°, cooling the residual thick yellow oil with ice, and inducing crystn., by the addn. of petr. ether gave 31.9 g. (31.5%) 1,1'-dihydroxybicyclopentyl (II), m. 108–9°. Heating 100 cc. concd. H_2SO_4, 100 cc. H_2O, and 60 g. II for 2 hrs. on a boiling H_2O bath, steam-distg., extg. the distillate with ether, drying the ether ext., and distg. first to remove the ether and then *in vacuo* to obtain the product yielded 41.9 g. (78.1%) spiro[4.5]decan-6-one (III), b_{20} 99–100°, n_D^{20} 1.4848, d_4^{20} 0.9898, MR_D 44.08 (calcd. 43.99). To 80 ml. HNO_3 (d.1.4), 40 cc. of water, and 0.1 g. NH_4 vanadate maintained at 55–60° on a water bath was added 30 g. III, the reaction mixt. heated on a boiling water bath for 1 hr., the soln. filtered, and the filtrate evapd. on a water-bath to a sirup which crystd. on cooling. The yield of cyclopentane-1-carboxylic-1-butyric acid (IV) m. 91–2°, was 20.8 g. (68%). A finely ground mixt. of 20 g. IV and 1 g. cryst. $Ba(OH)_2$ in a flask in a metal bath was gradually heated to 295–300°, at which temp. the spiro ketone distd. The distillate was satd. with anhyd. K_2CO_3, the ketone sepd., dried with fused K_2CO_3, and distd. The yield of spiro[4.4]nonan-1-one (V) was 12.4 g. (80.6%), b_{760} 202.3°, n_D^{20} 1.4770, d_4^{20} 0.9842, MR_D 39.65 (calcd. 39.37). V (34 g.), 27.3 g. $N_2H_4.H_2O$ (VI), and 42 cc. EtOH were refluxed for 6 hrs. on an oil bath maintained at 120°. The EtOH and remaining VI were removed by distn., the temp. of the bath being raised to 140°. The residue was satd. with solid KOH and the upper layer, consisting of the hydrazone, was sepd. from the aq. lower layer. The product was dried with molten KOH at 100° to yield 35.4 g. of the hydrazone (VII) of V, a thick yellow oil (no phys. consts. given). A mixt. of 35.4 g. VII, 2 g. freshly fused KOH, and a small lump of platinized charcoal was heated on a metal bath, the temp. of which was raised gradually; at 160° a vigorous decompn. of VII took place. The main amt. of hydrocarbon distd. at a bath temp. of 185–90° and a vapor temp. of 153–5°; to complete the distn. the bath temp. was raised to 200°. The distillate was distd. repeatedly over fresh catalyst. The product obtained was washed with 50% HOAc, water, 3% KOH, again with water, and dried over fused K_2CO_3. After fractional distn. over Na, 21 g. I (68.7%) was obtained, b_{760} 156.2–6.7°, n_D^{20} 1.4618, d_4^{20} 0.8831, MR_D 39.52 (calcd. 39.36). *I* is a colorless mobile liquid with an odor similar to that of the terpenes.

Bernard Wolnak

Catalytic transformations of spiro[4.4]nonane. N. D. Zelinsky and N. V. Elaghina (M. V. Lomonosov State Univ., Moscow). *Compt. rend. acad. sci. U.R.S.S.* 50, 227-9(1946)(in English); cf. *C.A.* 40, 6058[7].—Hydrogenation of *spiro*[4.4]nonane (I),



synthesized for the first time, cleaves one of the 5-membered rings with the formation of cyclopentane homologs, and then the other to form a mixt. of the 6 theoretically possible isomeric nonanes. I, b_{760} 156.5-7°, n_D^{20} 1.4619, d_4^{20} 0.8621, MR_D 39.58 (calcd. 39.36), was passed over 20% platinized charcoal with H at 300-5° at 5 drops per min.; the resulting product, n_D^{20} 1.4230, was passed a 2nd time over the catalyst and underwent no further change when n_D^{20} reached 1.4218. From the condensate, treated with H_2SO_4 contg. 8% SO_3, H_2O, 3% NaOH, and H_2O, dried over $CaCl_2$, and fractionated over Na, 2 fractions equal in wt. were obtained. Fraction 1, b. 130-40°, consisted mainly of a mixt. of isomeric nonanes, C_9H_{20}, and fraction 2, b. 140-4°, of a mixt. of cyclopentane homologs, C_9H_{18}. I passed over platinized charcoal at 305-10° in a CO_2 atm. underwent aromatization, the product being chiefly *o*-MeC_6H_4Et (II). I is supposedly converted into II through the intermediate formation of bicyclo[4.3.0]nonane (III). I, b_{760} 156.2-7.7°, n_D^{20} 1.4618, d_4^{20} 0.8631, MR_D 39.52 (calcd. 39.36), was passed 3 times over 10% platinized charcoal at 305-10° in a current of CO_2 at 15 drops/min. The resulting product, n_D^{20} 1.4708, was again thrice passed over the catalyst giving products with n_D^{20} [illegible], [illegible], and [illegible], resp., which remained const. at the latter value. The product was fractionated over Na and the larger 2nd fraction, b_{760} 163.7°, n_D^{20} 1.4908, d_4^{20} 0.8857, had properties similar to those of II. II on oxidation with $KMnO_4$ formed *o*-phthalic acid, m. 127-8°, which in turn produced the anhydride.

R. E. Dunbar

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

CA

Preparation of pinacols of mixed types by simultaneous reduction of two ketones. N. V. Eligina and N. D. Zelinskii (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 71, 293–4(1950).—Addn. of 72 g. $HgCl_2$ in 200 g. cyclopentanone and 270 g. Me_2CO to 1 at CdI_2 (1 l.) and 140 g. Al shavings, followed by refluxing 2 hrs., heating 1 hr. with 800 ml. addnl. C_6H_6 and 800 ml. H_2O, filtration, and extn. of the ppt. with hot C_6H_6 gave 32.7% *1-(1-hydroxyisopropyl)cyclopentanol*, b_{11} 105–8°, m. 64–5° (from petr. ether). Cyclohexanone likewise gave 33.5% *1-(1-hydroxyisopropyl)cyclohexanol*, b_9 111–13°, m. 82–3°.

G. M. Kosolapoff

CA

Synthesis of 1,1-dimethylcyclohexane. N. D. Zelinskii and N. V. Elagina (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk. S.S.S.R.* 73, 705-7(1950).—Gradual addn. of 75 g. powd. 1-isopropyl-1,3-cyclopentanediol, m. 64-5°, to 350 g. 63% H_2SO_4 and shaking 4 hrs. gave 45.2% *2,2-dimethylcyclohexanone*, b_{760} 70-70.5°, n_D^{20} 1.4384, d_4^{20} 0.9117; after purification through the semicarbazone, the product bp 73°, n_D^{20} 1.4386, d_4^{20} 0.9121. This (25 g.) and 22 g. 90% $N_2H_4.H_2O$ in 35 ml. EtOH were refluxed 7 hrs., then concd. and heated to 140°; treatment with solid KOH gave 26.6 g. *oily hydrazone*, which was decompd. in the crude state by slow addn. to powd. KOH and Pt-C at 160-80°, yielding 58% *1,1-dimethylcyclohexane*, b_{760} 119.2-19.4°, n_D^{20} 1.4206, d_4^{20} 0.7883. G. M. Kosolapoff

YELAGINA, N. V.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

ELAGARA

Preparation of the ethyl 1-(3-bromopropyl)-2-oxocyclopentanecarboxylate and the ethyl 1-(3-chloropropyl)-2-oxocyclopentanecarboxylate. N. D. Zelinskii and N. V. Elagina. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1052, 419–21 (Engl. translation).—See *C.A.* 47, 3803c.

H.

YELAGINA, N. V.

FA 234T27

USSR/Chemistry - Cyclization 21 Oct 52

"The Closing of Five-Membered Rings With the Aid of Organomagnesium Compounds," Acad N. D. Zelinskiy, N. V. Yelagina, Lab of Org Chem imeni N. D. Zelinskiy, Moscow State U imeni M. V. Lomonosov

"Dok Ak Nauk SSSR" Vol 86, No 6, pp 1117-1119

2-(gamma-bromopropyl)-cyclopentanone-1 was treated with Mg to produce the Grignard reagent, which underwent a coupling in its mol between the gamma carbon of the propyl group and the 1 position of the ring to produce a bicyclic compd. The yield was 14.3% of theory.

234T27

[illegible], N.V.

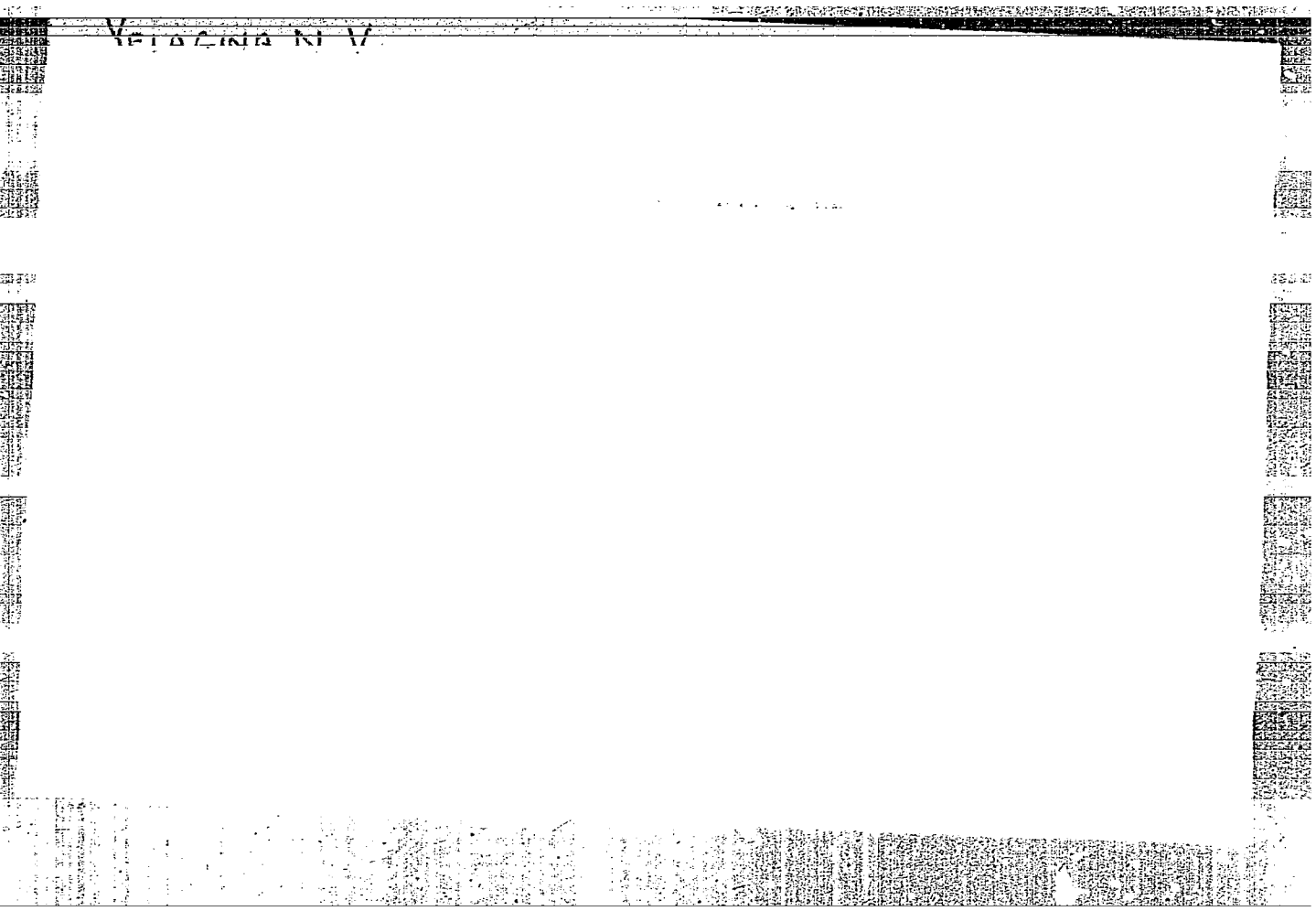
Chem Abs v48
1-25-54
Organic Chemistry

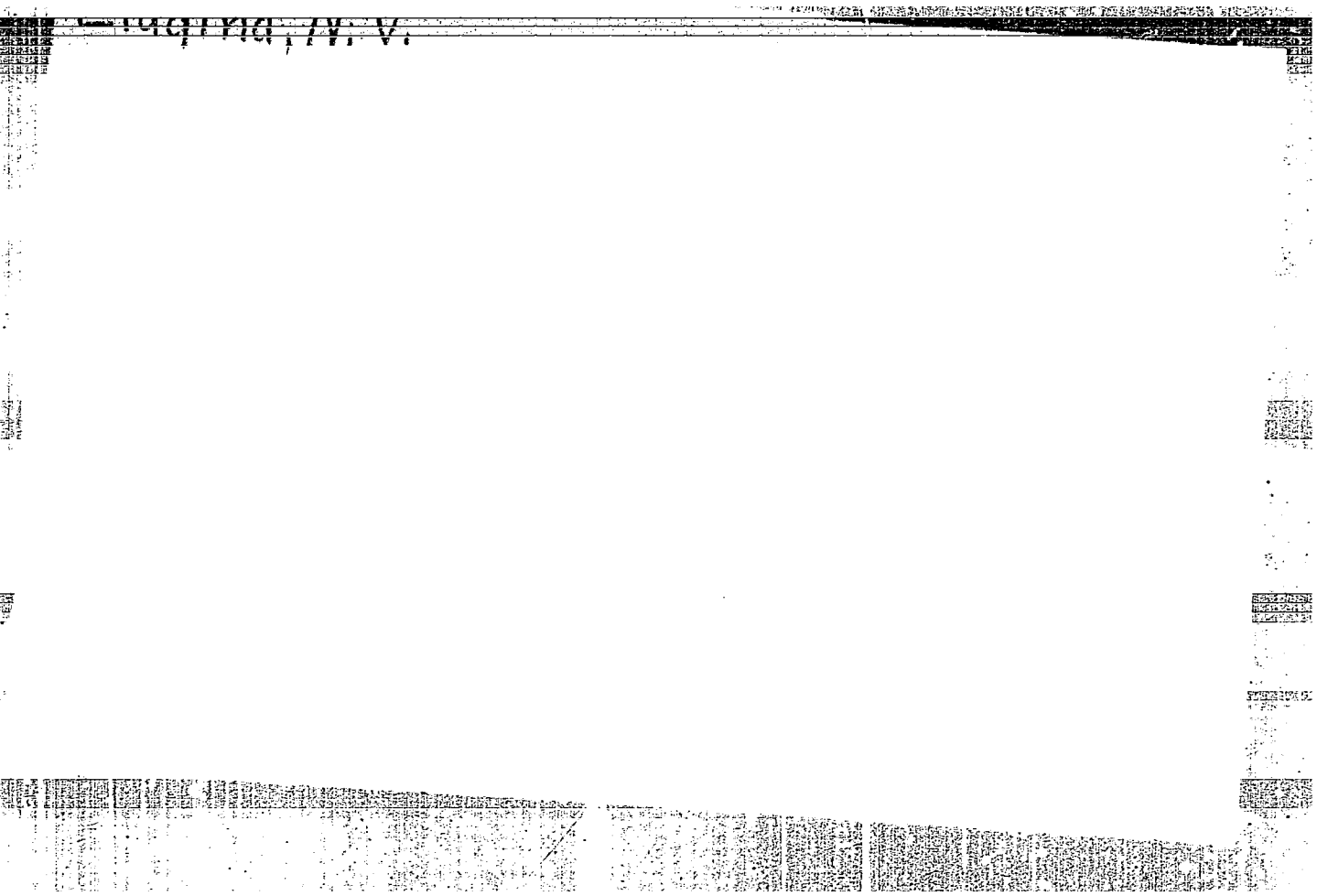
Chem
(3)

Synthesis of spiro[5.5]undecane. N. D. Zelinskiĭ and N. V. [illegible] (M. V. Lomonosov State Univ., Moscow). *Doklady Akad. Nauk S.S.S.R.* 87, [illegible](1952); cf. C.A. 20, 1060.—Tetrahydrofurfuryl alc. with PBr_3 in pyridine gave 70% tetrahydrofurfuryl bromide, $b_{[illegible]}$ 70°. This [illegible] from this gave 4-penten-1-ol, 58%, $b_{[illegible]}$ 137-9°, which with PBr_3 in pyridine gave *5-bromo-1-pentene*, 67%, $b_{[illegible]}$ 125-7°. This (14.7 g.) in Et_2O added to 2.3 g. Mg over 2 hrs. at reflux, followed by 20.5 g. cyclohexanone added in 1 hr. with ice cooling, gave after usual treatment 61.8% *1-(4-penten-1-yl)-1-cyclohexanol*, $b_{[illegible]}$ 80°, n_D^{20} 1.4781, d_{20} 0.9160. This (10 g.) and 30 ml. H_3PO_4 heated in 1.5 hrs. to 135-40°, then dild. with petr. ether and H_2O gave 73.9% *spiro[5.5]-undecene*, b_{760} 211-12.5°, n_D^{20} 1.4930, d_{20} 0.9037. This passed over 20% Pt-C at 100° in H gave a catalyzate which washed with H_2SO_4, H_2O, and 2% NaOH and distd. over Na gave some 85% *spiro[5.5]undecane*, b_{760} 209-10°, n_D^{20} 1.4750, d_{20} 0.8785.

G. M. Kosolapoff

[illegible]
7-13-54





APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962520010-5"

5(3)

AUTHORS: Yelagina, N. V., Kazanskiy, B. A., Academician

SOV/20-124-5-25/62

TITLE: The Synthesis of Spiro-(5,6)-dodecane (Sintez spiro-(5,6)-dodekana)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 5, pp 1053-1056 (USSR)

ABSTRACT: In former communications, the first author described the synthesis of several cyclic hydrocarbons with a quaternary carbon atom in the cycle (Refs 3,4). They were obtained by means of the pinacoline rearrangement from bitertiary α-glycols. The ketones thus procured were changed into hydrazones, the latter catalytically decomposed according to N. M. Kizhner. The above-mentioned reaction was used in this paper for the synthesis of the above-mentioned bicyclic hydrocarbon with spiran structure (I). For this purpose cyclohexanone was reduced with amalgamated aluminum in dry benzene and yielded 1,1'-dioxy-1,1'-dicyclohexyl (II). Pinacol turned by the action of 63 % sulphuric acid into a mixture of 30 % spiro-(5,6)-dodecanone-7 (III) and 70 % 1,1'-dicyclohexenyl (IV). Neither strongly nor weakly concentrated H_2SO_4 led to the proper result as the

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The Synthesis of Spiro-(5,6)-dodecane

SOV/20-124-5-25/62

reaction products in the first case were resinified, while weakly concentrated H_2SO_4 acted mainly in a dehydrating manner and first of all led to 1,1'-dicyclohexenyl (IV). The ketone- (III) and diene- (IV) mixture was subjected to fractional distillation in vacuum; the fractions enriched with spiro ketone were treated with hydrochloric acid semicarbazide. The spiro-(5,6)-dodecanone-7-semicarbazone was decomposed by hydrochloric acid and the ketone was distilled off with steam. Through the action of hydrazine hydrate on spiro-(5,6)-dodecanone-7 (III) hydrazone (V) was synthesized; it was decomposed in the presence of caustic potash and platinated carbon. The final product obtained as mentioned in the title is a rather dense, colorless liquid with a pleasant camphor smell. Its constants are given and the usual data are furnished in an experimental part. There are 12 references, 7 of which are Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: November 24, 1958

Card 2/2

5(3)

AUTHORS: Yelagina, N. V., Stabnikova, T. V., Kazanskiy, B. A., Academician

SOV/20-124-6-17/55

TITLE: Synthesis of 6,9-Endomethylene-Spiro-(4,5)-Decane (Sintez 6,9-endometilenspiro-(4,5)-dekana)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 124, Nr 6, pp 1243 - 1246 (USSR)

ABSTRACT: By means of the diene-condensation of 2-methylene cyclohexanone-1 with cyclopentadiene an unsaturated spirane ketone- 1,4-endomethylene-spiro-(5,5)-undecene-2-one-7 (I) is formed (Ref 1). This compound was transformed into a tricyclic spirane hydrocarbon-1,4-endomethylene-spiro-(5,5)-undecane (II). In the present paper the authors used the initially mentioned diene-condensation for the synthesis of another representative of the substance (III) mentioned in the title. By means of the reaction of 2-methylene-cyclopentanone-1 (IV) with cyclopentadiene (V) an unsaturated spirane ketone was produced: 6,9-endomethylene-spiro-(4,5)-decene-7-one-1 (VI). As 2-methylene cyclopentanone-1 (IV) tends to polymerize, the Mannich-base (Mannikh) was introduced into the reaction, i.e. 2-(N-dimethyl

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aminomethyl)-cyclopentanone-1 (VII) which in the course of reaction decomposed into 2-methylene-cyclopentanone-1 and a secondary amine. By means of the catalytic dehydrogenation of the ketone (VI) in the presence of Reney nickel at a low temperature 6,9-endomethylene-spiro-(4,5)-decanone-1 (VIII) was produced. By the action of hydrazine hydrate (VIII) was transformed into hydrazone (IX). The latter was catalytically decomposed according to N. M. Kizhner. The substance obtained as mentioned in the title is a colorless, mobile liquid, with a terpene-like smell and with a boiling point of 83°/12 mm. The experimental part furnishes the usual data. There are 2 references, 1 of which is Soviet.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet im. M. V. Lomonosova (Moscow State University imeni M. V. Lomonosov)

SUBMITTED: December 3, 1958

MIRZAYEVA, A.K.; YELAGINA, N.V.; STERIN, Kh.Ye.; KAZANSKIY, B.A.

Catalytic conversions of spiro (4,5)decane on a platinum catalyst. Neftekhimia 2 no.1:31-36 Ja-F '62. (MIRA 15:5)

1. Moskovskiy gosudarstvennyy universitet, kafedra khimii nefti, i Komissiya po spektroskopii AN SSSR.
(Spirodecane) (Catalysts, Platinum)

YELAGINA, N.V.; MIRZAYEVA, A.K.; LAVRENOVA, A.S.; KAZANSKIY, B.A.

Synthesis of spiro[5,5]undecane. Neftekhimiia 2 no.3:265-269 My-Je '62. (MIRA 15:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova, kafedra khimii nefti.

(Spiroundecane)

YELAGINA, N.V.; MIRZAYEVA, A.K.; STERIN, Kh.Ye.; BOBROV, A.V.; KAZANSKIY, B.A.

Catalytic conversion of spiro-(5,6)-dodecane on a platinum catalysts. Neftekhimiia 4 no.2:241-245 Mr-Ap'64 (MIRA 17:8)

1. Moskovskiy gosudarstvennyy universitet imeni Lomonosova.

MIRZAYEVA, A.K.; YELAGINA, N.V.; STERIN, Kh.Ye.; BOBROV, A.V.; KAZANSKIY, B.A.

Catalytic conversions of n-alkyl benzene on a platinum catalyst.
Neftekhimia 4 no.3:417-420 My-Je '64. (MIRA 18:2)

1. Kafedra khimii nefti Moskovskogo gosudarstvennogo universiteta i Komissiya po spektroskopii AN SSSR.

KOZINA, M.P.; MIRZAYEVA, A.K.; SOSNINA, I.ye.; YELAGINA, N.V.; SKURATOV, S.M.; Prinimal uchastiye LYU TSZIN'-SYAN [Liu Chin-hsiang] (Koreyskaya Narodnaya Respublika

Heat of formation of spirocyclane hydrocarbons. Dokl. AN SSSR 155 no. 5:1123-1125 Ap '64. (MIRA 17:5)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova. Predstavleno akademikom B.A.Kazanskim.

YELAGINA, O.S.

Proving and baking unit for making shaped bread loaves.
Khleb.i kond.prom. 6 no.6:8-11 Je '62. (MIRA 15:7)

1. Belopol'skiy mashinostroitel'nyy zavod.
(Bakers and bakeries--Equipment and supplies)
(Assembly-line methods)

VOINOV, S.I., kand. veter. nauk; KARPOVICH, M.B., mladshiy nauchnyy sotrudnik; SHEVYREV, N.S.; BELYAYEV, A.S.; YELAGINA, V.B.; KREMEN', G.Ya., veterinarnyy vrach

Results of a two-year industrial manufacture and control of the O, A. and S types of lapinized foot- and-mouth disease antigens. Veterinariia 40 no.11:69-70 N '63.

(MIRA 17:9)

1. Gosudarstvennyy nauchno-kontrol'nyy institut veterinarnykh preparatov Ministerstva sel'skogo khozyaystva SSSR (for Voinov, Karpovich). 2. Glavnyy veterinarnyy vrach Kurskoy biofabriki (for Shevyrev). 3. Nachal'nik nauchno-kontrol'noy laboratorii Kurskoy biofabriki (for Belyayev). 4. Nachal'nik tsekha tipospetsificheskikh yashchurnykh komponentov Kurskoy biofabriki (for Yelagina). 5. Kurskaya biofabrika (for Kremen').

YELAGINA, YE. I.

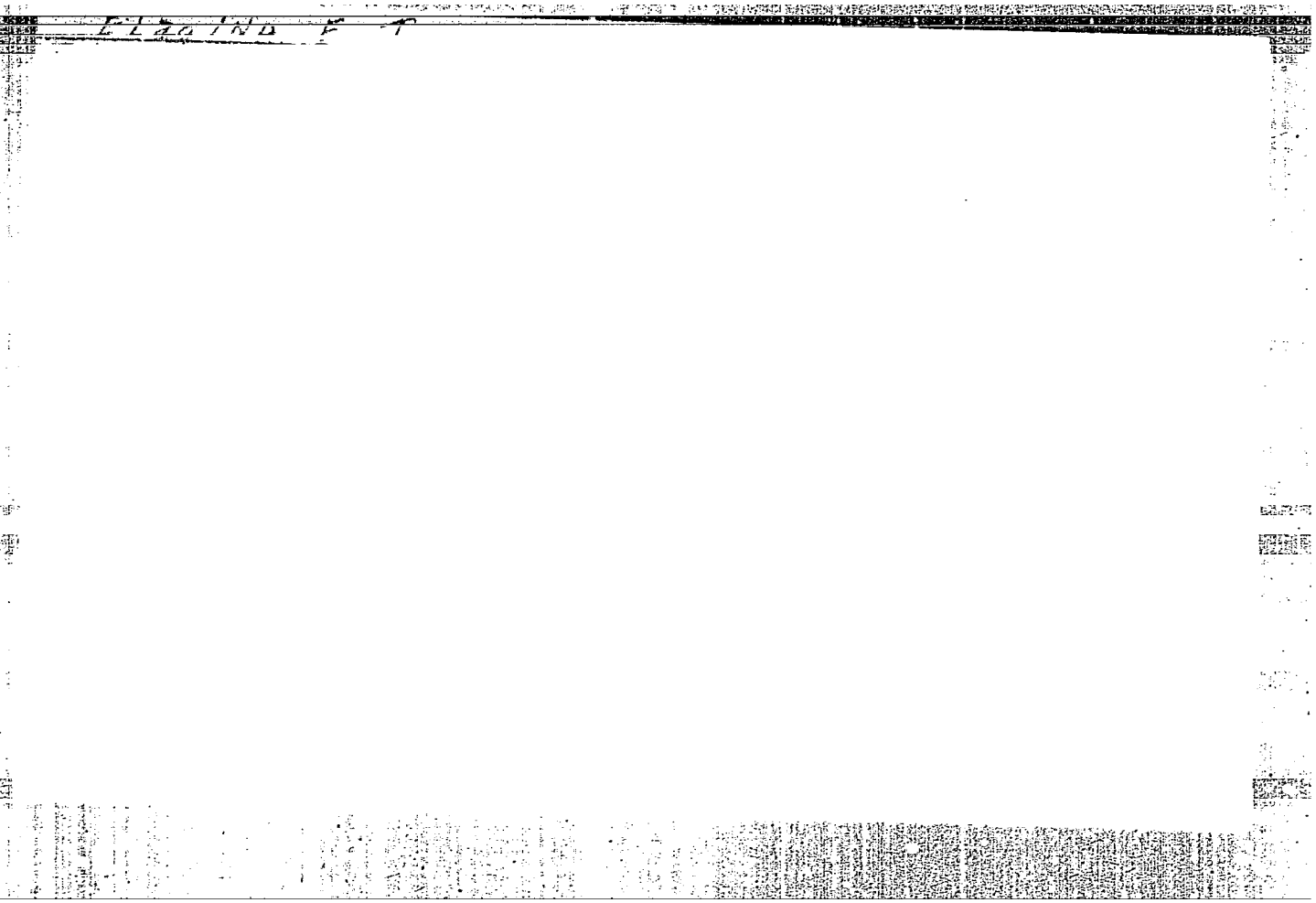
Dissertation: "Investigation of the Interaction of Chlorides of Cadmium and Lead With Zinc in Melts." Cand Chem Sci, Voronezh State U, Voronezh, 1953. (Referativnyy Zhurnal--Khimiya, Moscow, No 5, Mar 54)

SO: SUM 243, 19 Oct 54

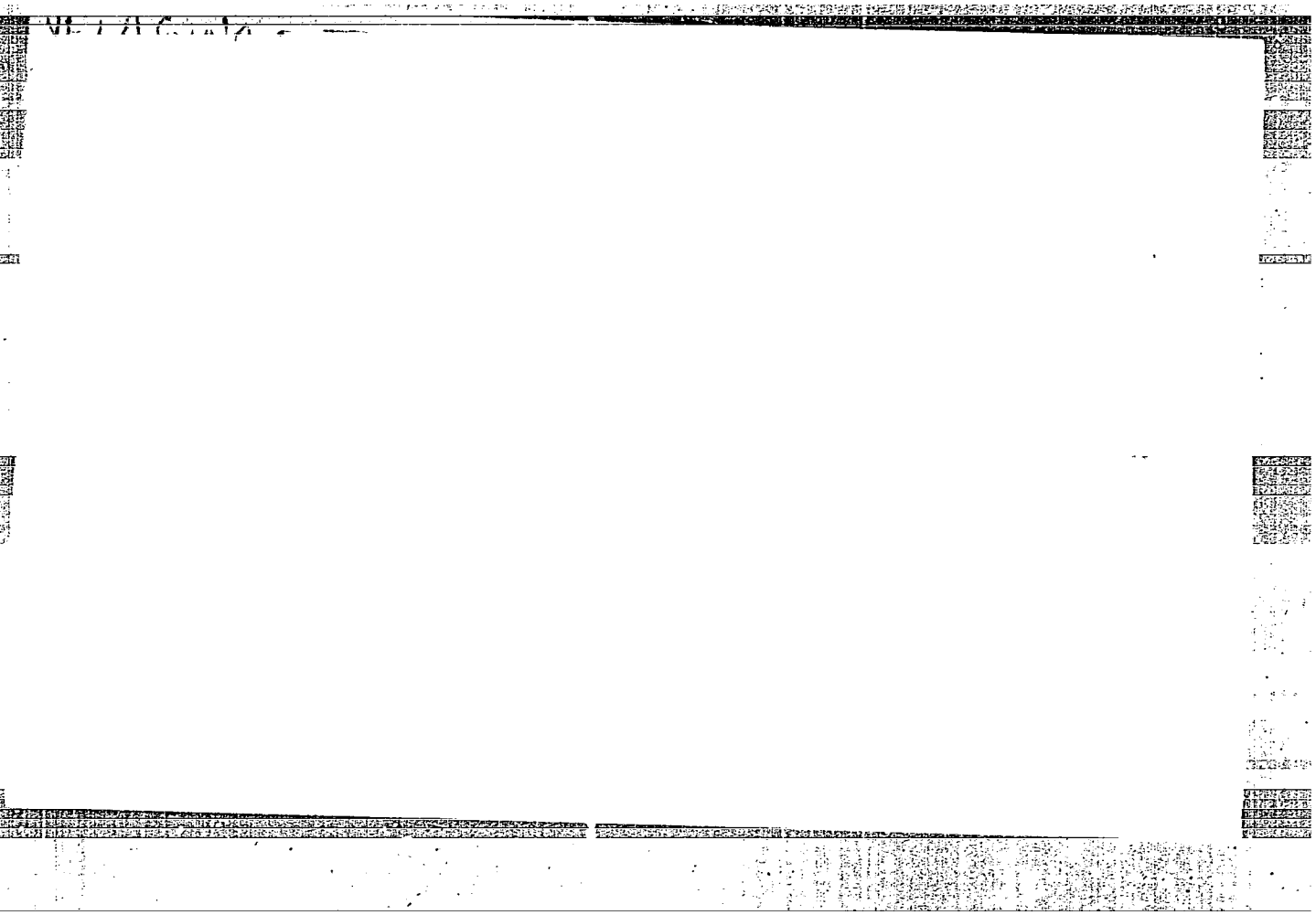
YELAGINA, Ye.I.; PALKIN, A.P.

Reactions of salts with metals in melts. Interaction in the system: $CdCl_2 + Zn \rightarrow ZnCl_2 + Cd$. Zhur.neorg.khim. 1 no.5:1042-1046. My '56. (MLRA 9:10)

1. Kafedra obshchey i neorganicheskoy khimii Voronezhskogo gosudarstvennogo universiteta.
(Chlorides) (Metals)



[illegible] Pb, Te, and Se. The cooling and heating curves were [illegible]



APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R001962520010-5"

5(2), 18(7)

AUTHORS: Yelagina, Ye. I., Abrikosov, N. Kh.

SOV/78-4-7-29/44

TITLE: An Investigation of the Systems PbTe - Bi_2Te_3 and SnTe - Sb_2Te_3 (Issledovaniye sistem PbTe - Bi_2Te_3 i SnTe - Sb_2Te_3)

PERIODICAL: Zhurnal neorganicheskoy khimii, 1959, Vol 4, Nr 7, pp 1638-1642 (USSR)

ABSTRACT: The present investigation was carried out with the intention of finding new semiconductors. No published data are available on the ternary system Pb - Bi - Te, the system Sn - Sb - Te has not been examined. In the alloys produced, microstructure was investigated, and the thermoelectromotive force referred to Cu at a temperature difference of 20°, as well as electric conductivity were measured. Moreover, X-ray pictures were taken. Figure 1 shows the phase diagram of the system PbTe - Bi_2Te_3, figure 2 the microstructure of the alloys, figure 4 the phase diagram of the system SnTe - Sb_2Te_3, and figure 5 the corresponding microstructures. In the first mentioned system, the primarily crystallizing phase consists of PbTe. With increasing

Card 1/2

An Investigation of the Systems PbTe - Bi_2Te_3 and SnTe - Sb_2Te_3

Bi_2Te_3 content, the crystallization temperature drops, until, finally, at 82.7% Bi_2Te_3, a single-phase coarse-crystalline structure is formed, which corresponds to the compound $PbTe.2Bi_2Te_3$ and which is located in the phase diagram on the ordinate passing through the inflection of the solidus curve. X-ray analyses confirm the existence of the ternary intermediate phase. Table 1 gives the interplanar spacings of the crystal lattice, figure 3 and table 2 give the thermoelectromotive force and the electric conductivity of the system. At 71.8% Sb_2Te_3 the compound $SnTe.Sb_2Te_3$ is formed. Both systems belong to the same type, the thermodynamic analysis was given by I. I. Novikov (Ref 17). There are 5 figures, 3 tables, and 17 references, 8 of which are Soviet.

SUBMITTED: April 2, 1958

S/576/61/000/000/018/020
E021/E120

AUTHOR: Yelagina, Ye.I.

TITLE: Study of the PbSe-Sb_2Se_3 system

SOURCE: Soveshchaniye po poluprovodnikovym materialam, 4th. Voprosy metallurgii i fiziki poluprovodnikov; poluprovodnikovyye soyedineniya i tverdyye splavy. Trudy soveshchaniya. Moscow, Izd.-vo AN SSSR, 1961. Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Fiziko-tekhnicheskiy institut. 148-152.

TEXT: The present work is a continuation of investigations of ternary systems with the aim of searching for new semiconducting compounds. The Pb-Se and Sb-Se systems which form the compounds PbSe and Sb_2Se_3 have been investigated previously. Alloys were prepared from lead with total impurity content (Ag, Zn, Bi, Cu, Mg, Ca) of about 0.007%, antimony with 0.32% impurities (including 0.24% Pb) and selenium with total impurity content (Fe, Al, Mg, Si) of up to 0.01%. Master alloys corresponding to PbSe and Sb_2Se_3 were prepared in evacuated quartz vessels. The composition was controlled by examination of microstructures.

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S/576/61/000/000/018/020
E021/E120

Study of the $PbSe-Sb_2Se_3$ system

Alloys of the $PbSe-Sb_2Se_3$ system were prepared from the master alloys. They were heated at 500 °C for 1 - 4 months in evacuated quartz vessels, partially filled with argon, and the properties and structure of the alloys were investigated. The alloys were also subjected to thermal analysis. A phase diagram was constructed on the basis of the thermal analysis and microstructure (Fig.1). A ternary compound $PbSb_2Se_4$ is formed with a melting point of 618 °C. Solid solutions based on the compound extend from 49 to 56 mol % Sb_2Se_3 at 550 °C and 50 to 53 mol % at 500 °C. Measurements of the thermal e.m.f. and Hall effect showed that the ternary compound possessed n-type conduction. Graphs of thermal e.m.f. and conductivity against composition showed that there was minimum conductivity and maximum negative e.m.f. at the composition corresponding to the compound. The ternary compound also has maximum microhardness and minimum thermal conductivity. The thermal e.m.f. of the compound against copper was - 870 μV/°C, its conductivity was 1×10^{-6} ohm^{-1} cm^{-1}, and its microhardness 140 kg/mm^2. A.V. Ioffe and A.F. Ioffe are mentioned in the paper in connection with their method of measurement of thermal conductivity.

Card 2/4

Study of the $PbSe-Sb_2Se_3$ system

S/576/61/000/000/018/020
E021/E120

There are 6 figures and 16 references: 4 Soviet-bloc and 12 non-Soviet-bloc. The four most recent English language references read as follows:

Ref. 4: A.E. Goldbery, G.R. Mitchell,
J. Chem. Phys., 1954, v.22, 220.
Ref. 6: Wayne W. Scanlon. Phys. Rev., 1953, v.92, 1573.
Ref.12: N.W. Tideswell, F.H. Kruse, G.D. McCollough.
Acta Crystall. 1957, v.10, 2, 99.
Ref.16: G.V. Raunor. Annotated Equilibrium Diagrams.
The Inst. of Metals, London, 1951, 9.

Card 3/4

Study of the $PbSe-Sb_2Se_3$ system

S/576/61/000/000/018/020
E021/E120

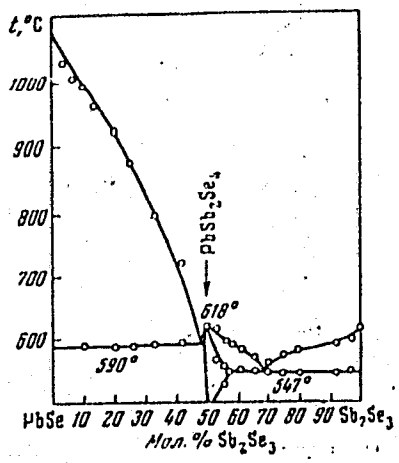

Fig. 1

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S/576/61/000/000/019/020
E021/E120

AUTHOR: Yelagina, Ye.I.

TITLE: Study of the PbSe-Bi_2Se_3 system

SOURCE: Soveshchaniya po poluprovodnikovym materialam, 4th. Voprosy metallurgii i fiziki poluprovodnikov; poluprovodnikovyye soyedineniya i tverdyye splavy. Trudy soveshchaniya. Moscow, Izd.-vo AN SSSR, 1961. Akademiya nauk SSSR. Institut metallurgii imeni A.A. Baykova. Fiziko-tekhnicheskiy institut. 153-158.

TEXT: In previous work (Ref.1: Ye.I. Yelagina, N.Kh. Abrikosov, Zh. neorganich. khimii, 1959, v.4, 7, 1618, and Ref.2: Ye.I. Yelagina, Issledovaniye sistemy PbSe-Sb_2Se_3 (present publication, 148) the present author has shown that ternary semiconducting compounds can be present in pseudobinary systems. The present work is a study of the PbSe-Bi_2Se_3 system. The initial materials were lead with total impurity (Ag, Zn, Bi, Cu, Mg, Ca) 0.007%, bismuth with total impurity (Ag, Zn, Cu, Fe, Sb, Pb) 0.025%, and selenium with total impurity (Fe, Al, Mg, Si) up to 0.01%. Master alloys of PbSe and Bi_2Se_3 were prepared in

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evacuated quartz vessels, and the composition was controlled by examination of the microstructure. Alloys of the $PbSe-Bi_2Se_3$ system were prepared in evacuated quartz vessels. All the samples with up to 75 mol % Bi_2Se_3 required homogenising at 550-720 °C from one to five months. The properties and microstructures of the homogenized alloys were investigated. X-ray and thermal analyses were also carried out. An equilibrium diagram was constructed from the data obtained (Fig.1). There are three intermediate phases with compositions corresponding to $3PbSe\ 2Bi_2Se_3$; $PbSe\ Bi_2Se_3$; and $PbSe\ 2Bi_2Se_3$, forming by peritectic reactions at 720, 700 and 675 °C respectively. All the compounds have semiconducting properties. There is a solid solution region extending up to 20 mol % Bi_2Se_3. In this region, with increase in Bi_2Se_3 content there is a decrease in the thermoelectric effect. The electrical conductivity - composition curve has a minimum at 5 mol % Bi_2Se_3. X-ray analysis shows that the formation of the solid solution results in a change of lattice parameter from 6.14 to 6.02 Å with a minimum at 10 mol % Bi_2Se_3. This may be connected with the formation of a defect lattice by the substitution of 3 lead atoms with 2 bismuth atoms.

Study of the $PbSe-Bi_2Se_3$ system

S/576/61/000/000/019/020
E021/E120

The thermal conductivity also decreases slowly from 6.5×10^{-3} cal/cm.sec.degree for PbSe to approximately 4.3×10^{-3} cal/cm.sec. degree for 20 mol % Bi_2Se_3. A.V. Ioffe and A.F. Ioffe are mentioned in the paper in connection with their method of measurement of thermal conductivity.
There are 8 figures, 1 table and 18 references: 7 Soviet-bloc and 11 non-Soviet-bloc. The English language references read as follows:
Ref. 5: Wayne W. Scanlon. Phys. Rev., 1953, v.92, 1573.
Ref.15: J. Blak, E.U. Conwell, J. Phys. Chem. Solids, 1957, v.2, 3, 240.
Ref.18: D. Solomon, W. Morris-Jones. Phyl. Mag., 1934, v.11, 1090.

Card 3/4

Study of the $PbSe-Bi_2Se_3$ system

S/576/61/000/000/019/020
E021/E120

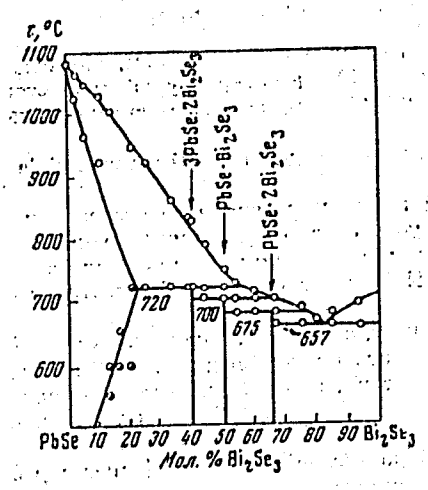

Fig. 1

Card 4/4

S/058/62/000/002/037/053
A001/A101

24.7700

AUTHOR: Yelagina, Ye. I.

TITLE: Investigation of the PbSe-Sb_2Se_3 compound

PERIODICAL: Referativnyy zhurnal, Fizika, no. 2, 1962, 32, abstract 2E297 (V sb. "Vopr. metallurgii i fiz. poluprovodnikov", Moscow, AN SSSR, 1961, 148-152)

TEXT: The PbSe-Sb_2Se_3 system was investigated by the thermal and microstructural methods, and the constitution diagram of this system was established. A ternary compound $PbSb_2Se_4$ was discovered and the boundaries of the solid solution region on its base were determined. The conditions for the formation of the ternary compound are described. The basic properties of the $PbSb_2Se_4$ compound are as follows: thermo-emf in pair with Cu is 870 μv/°C, electric conductivity 10^{-6} $ohm^{-1}.cm^{-1}$, microhardness 140 kg/mm^2, the forbidden band width 1.8 ev. The effect on the above listed properties of addition to the ternary compound of PbSe and Sb_2Se_3 are described.

B. Ol'khov

[Abstracter's note: Complete translation]

Card 1/1

26.2537

40190

S/081/62/000/013/005/054
B158/B144

AUTHOR: Yelagina, Ye. I.

TITLE: Examination of the system PbSe-Sb_2Se_3

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 61, abstract 13B373 (Sb. "Vopr. metallurgii i fiz. poluprovodnikov". M., AN SSSR, 1961, 148 - 152)

TEXT: The system PbSe-Sb_2Se_3 was examined by a thermal and a microstructure method and a phase diagram was established for this system. A ternary compound, $PbSb_2Se_4$ (I), was found and the resulting domain boundaries of solid solutions were determined. I is formed at a temperature of 618°C with an open maximum. The domain of solid solutions on the basis of I stretches from 49 to 56 mole-% of Sb_2Se_3 at a temperature of 550°C and from 50 to 53 mole-% of Sb_2Se_3 at 500°C. Compound I has the following properties: thermo-e.m.f. paired with copper: +870 μv/deg, electrical conductivity: 10^{-6} ohm^{-1} cm^{-1}, microhardness 140 kg/mm^2, width of forbidden band: 1.80 ev. Addition of

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S/081/62/000/013/005/054
B158/B144

Examination of the system ...

PbSe and Sb_2Se_3 to I causes a reduction in the absolute value of the thermo-e.m.f., a slight rise in the electrical conductivity and heat conductivity, and a reduction in the microhardness. [Abstracter's note: Complete translation.]

Card 2/2

24.7300

S/081/62/000/013/006/054
B159/B144

AUTHOR: Yelagina, Ye. I.

TITLE: Examination of the system PbSe-Bi_2Se_3

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 13, 1962, 61, abstract 13B374 (Sb. "Vopr. metallurgii i fiz. poluprovodnikov". M., AN SSSR, 1961, 153-158)

TEXT: The system PbSe-Bi_2Se_3 was studied by the methods of thermal and microstructure analysis. The presence was established of a domain of solid solution from the PbSe side, up to 20 mole-% Bi_2Se_3, and of three intermediate phases, the composition of which corresponds to the composition of compounds $3PbSe.2Bi_2Se_3$, $PbSe.Bi_2Se_3$ and $PbSe.2Bi_2Se_3$. These three compounds are formed by peritectic reactions at temperatures of 720, 700 and 675°C, respectively. Variations in the lattice parameter of the alloys in the solid solution domain on the basis of PbSe and in the properties as dependent on the composition were determined. The properties of the

Card 1/2

S/081/62/000/013/006/054
B158/B144

Examination of the system ...

ternary compounds were determined and it was shown that they are semiconductors. [Abstracter's note: Complete translation.]

Card 2/2

YELAGINA, Ye. I.
TITLE: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).
SOURCE: Atomnaya energiya, v. 15, no. 3, 1963, 266-267.

ACCESSION NR: AP3008085

Ye. I. Yelagina, N. Kh. Abrikosov. Synthesis and investigation of rhenium silicide.

G. P. Shveykin and others. Kinetics of niobium oxicarbide decomposition in vacuum, interaction of niobium and carbon monoxide, etc., in connection with the development of the carbothermal method of extraction of niobium from its oxides.

L. A. Nisel'son and others. Obtaining niobium, tantalum, and their alloys by reduction of gaseous chlorides with hydrogen on a heated surface.

G. V. Samsonov, S. N. L'vov, V. N. Paderno. Obtaining ZrC, HfC, NbC, and TaC solid solutions by hot compacting of mixtures of oxides with carbon.

V. F. Funke, V. I. Pshenichny*y. Study of conditions of obtaining TiC, ZrC, and VC from oxides.

V. N. Bondarev. Investigation of synthesis of transition-metal

Card 4/11

L 13566-66 EWT(m)/ETC(F)/EWG(m)/EWP(t)/EWP(b) IJP(c) RDW/JD
ACC NR: AP6001231 SOURCE CODE: UR/0363/65/001/012/2151/2153

AUTHOR: Abrikosov, N. Kh.; Yelagina, Ye. I.; Popova, M. A.

ORG: Institute of Metallurgy im. A. A. Baykov (Institut metallurgii); Moscow Institute of Fine Chemical Technology im. M. V. Lomonosov (Moskovskiy institut tonkoy khimicheskoy tekhnologii)

TITLE: Study of the $PbTe-Sb_2Te_3$ system

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 12, 1965, 2151-2153

TOPIC TAGS: lead compound, antimony compound, tellurium compound, solid solution, PHASE DIAGRAM, THERMAL ANALYSIS

ABSTRACT: Microstructural and thermal analyses were used to study the $PbTe-Sb_2Te_3$ system, and a phase diagram of the latter was plotted (see Fig. 1). It was shown that a

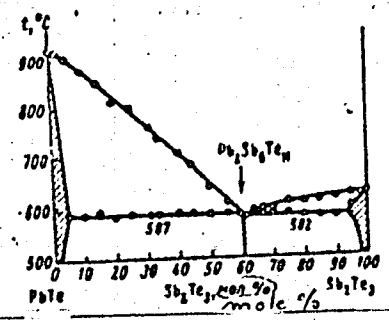

Fig. 1. Phase diagram of the $PbTe-Sb_2Te_3$ system.

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UDC: 546.85'241+546.86'241

L 13566-66

ACC NR: AP6001231

single ternary compound $Pb_2Sb_6Te_{11}$ is formed in the system at 587C. The composition corresponding to the peritectic point coincides with the composition of the compound. The ternary compound forms a eutectic with a solid solution based on Sb_2Te_3 at an Sb_2Te_3 content of 61 mole % and a temperature of 582C. The existence of regions of solid solutions of Sb_2Te_3 (up to 3 mole %) in PbTe and solutions of PbTe (up to 2 mole %) in Sb_2Te_3 at the same temperature was established. Some properties of the compound $Pb_2Sb_6Te_{11}$ were determined: m.p. 587C; $H\mu$ 51.0 kg/mm; $\chi 6.1 \times 10^{-3}$ cal/cm sec g; δ 504 ohm^{-1} cm^{-1}. Orig. art. has: 4 figures and 1 table.

SUB CODE: 07, 11 / SUBM DATE: 28Jul65 / ORIG REF: 006 / OTH REF: 005

Card 2/2

KHOL'NOVA, V.I.; KOVRIZHNYKH, V.G.; YELAGINA, Z.A.; Prinimali uchastiye: VINOKUROV, N.D.; ANDRIANOV, F.F.; ZAL'TSMAN, I.Ya.; VOLKOV, Ye.S.; VASILEVSKAYA, M.A.; KOMAROVA, N.K.

Investigating large-size forgings made of the B93 alloy. Alium. splavy no.3:136-144 '64. (MIRA 17:6)

FRIDLYANDER, I.N.; KHOL'NOVA, V.I.; YELAGINA, Z.A.

Effect of iron and silicon impurities on the macrostructure of the B93 alloy. Alium. splavy no.3:145-152 '64. (MIRA 17:6)

KHOL'NOVA, V.I.; DZEVOYED, A.A.; KUZNETSOVA, K.N.; YELAGINA, Z.A.

Effect of various conditions of heat treatment on the mechanical properties of the B93 alloy. Alium. splavy no.3: 153-158 '64. (MIRA 17:6)

ACCESSION NR: AT4037654 S/2981/64/000/003/0136/0144

AUTHOR: Khol'nova, V. I.; Kovrizhny*kh, V. G.; Yelagina, Z. A.

TITLE: A study of large stampings from alloy V93

SOURCE: Alyuminiyevy*ye splavy*, no. 3, 1964. Deformiruyemy*ye splavy* (Malleable alloys), 136-144

TOPIC TAGS: aluminum alloy, alloy V93, alloy stamping, alloy heat treatment, alloy mechanical property, alloy corrosion resistance

ABSTRACT: The report concerns the effects of production technology on the properties of large pieces (300 x 460 x 1026 mm) stamped at 350-430°C from ingots of alloy V93 (6.92-7.22% Zn, 1.93-2.06% Mg, about 1.0% Cu, 0.23-0.34% Fe, 0.12-0.15% Si, traces of Mn and Cr). The ingots were homogenized 36 hours at 445-465C and stamping followed forging at 350-420C (after preheating to 380-420C). Tests indicate tensile strength averaging 50.3-54.5 kg/mm^2 in three directions, yield 48.8-53.5 kg/mm^2, elongation 3.3-7.8% — depending on direction and area of stamping. Samples were quenched in hot water (75-85C) from 470C and aged 3 hours at 120C, then 4 hours at 165C. Tensile strength is not reduced by quenching in hot water; however, elongation deteriorates if the water temperature exceeds

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ACCESSION NR: AT4037654

85C. Corrosion tests were satisfactory, results approximating those for alloy V95. Warping was well within tolerance limits and it is concluded that parts can be heat treated after final mechanical operations by providing 2-3 mm machining allowances for special fits. "N. D. Vinokurov, F. F. Andrianov, I. Ya. Zal'tsman, Ye. S. Volkov, M. A. Vasilevskaya, N. K. Komarova and V. A. Klimova also took part in the work." Orig. art. has: 4 tables and 7 graphs.

ASSOCIATION: none

SUBMITTED: 00	DATE ACQ: 04Jun64	ENCL: 00
SUB CODE: MM	NO REF SOV: 000	OTHER: 000

Card 2/2

ACCESSION NR: AT4037655 S/2981/64/000/003/0145/0152

AUTHOR: Fridlyander, I. N.; Khol'nova, V. I.; Yelagina, Z. A.

TITLE: Effect of iron and silicon admixtures on the microstructure of alloy V93

SOURCE: Alyuminiyevy*ye splavy*, no. 3, 1964. Deformiruyemy* ye splavy* (Malleable alloys), 145-152

TOPIC TAGS: aluminum alloy, alloy V93, alloy microstructure, hot pressed aluminum alloy, heat treated aluminum alloy, alloy grain growth, iron admixture, silicon admixture

ABSTRACT: Ingots (diameter 70 mm) were dip-cast, then homogenized (48 hrs., 445-465C) and eventually pressed into strips (cross section 10x40 mm) after preheating for 3 hours at 400-415C, to study the effect of Fe and Si concentration on alloy microstructure. The numerous tested compositions were all based on Al (grade AV000) and contained 5.7-7.03% Zn, 1.41-1.96% Mg, 0.77-1.68% Cu, traces to 0.31% Si and 0.073-0.5% Fe. Samples were either hot pressed or heat treated (water quenched from 470 ± 5C, aged 3 hours at 120C and 4 hours at 165C). Increase of Fe to levels above 0.10% results in a finer grained and more equant structure of hot pressed samples. The heat treated material showed significantly reduced grain size and greater homogeneity with an increase in Fe.

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ACCESSION NR: AT4037655

It is concluded that ferrous components can act as recrystallization nuclei and that Fe can inhibit grain growth by forming a supersaturated solid solution in the Al. Orig. art. has: 1 table and 11 photomicrographs.

ASSOCIATION: none.

SUBMITTED: 00	DATE ACQ: 04Jun64	ENCL: 00
SUB CODE: MM	NO REF SOV: 000	OTHER: 000

Card 2/2

ACCESSION NR: AT4037656 S/2981/64/000/003/0153/0158

AUTHOR: Khol'nova, V. I.; Dzevoyed, A. A.; Kuznetsova, K. N.; Yelagina, Z. A.

TITLE: Effect of various heat treatment procedures on the mechanical properties of alloy V93

SOURCE: Alyuminiyevy*ye splavy*, no. 3, 1964. Deformiruyemy*ye splavy* (Malleable alloys), 153-158

TOPIC TAGS: aluminum alloy, aluminum zinc magnesium alloy, alloy heat treatment, alloy aging, alloy mechanical property, alloy corrosion resistance, quenching medium, aging temperature, aging period, interrupted aging

ABSTRACT: Forgings 200 and 300 mm thick, from ingots (diameter 650 or 860 mm) of alloy V93 (1.03% Cu, 1.86% Mg, 0.30% Fe, 7.3% Zn, less than 0.01% Si, Al based), served as the source of samples quenched from 470 ± 5C (25 min. in a niter bath) in cold or boiling (96C) water, as well as in cold and preheated (76C) oil. Interrupted aging involved 3 hrs. at 120C plus 4 hrs. at 165 ± 5C. Other samples were quenched in boiling water (94-96C) after 70 min. at 470 ± 5C, then aged in two stages: stage I at 100 or 120C, stage II at temperatures ranging by 5° intervals from 160 to 180C. Aging periods were 1, 2, 3, 4 and 6 hrs. at each temperature. Results indicate that quenching in hot water produces only

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ACCESSION NR: AT4037656

insignificant reductions in strength and this is deemed valuable in reducing stresses inside the piece. Best aging procedure from the standpoint of mechanical properties was at 100 plus 170C or 120 plus 170C, for 3 hour periods in each case. From the standpoint of corrosion resistance, aging for 3 hours at 120C plus 4 hours at 165 ± 5C was found to be optimal. Orig. art. has: 4 graphs and 2 tables.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 04Jun64 ENCL: 00

SUB CODE: MM NO REF SOV: 000 OTHER: 000

Card 2/2

USSR/ Miscellaneous - Foreign literature

Card 1/1 Pub. 128 - 35/35

Authors : Yelagina, Z. S.

Title : Survey of foreign magazines

Periodical : Vest. mash 35/3, 95 - 96, Mar 1955

Abstract : A list of the titles of articles appearing in foreign publications is presented, along with the names of their authors and indications as to where they may be found. The subjects deal with machine construction, power engineering and the technology of machine construction.

Institution : .....

Submitted : .....

YELAGINA, Z.S.

Review of foreign literature. Vest.mash.35 no.9:93 S '55. (MLRA 9:1)
(Bibliography--Machinery)

YELAGINA, Z.S.

Review of foreign journals. Vest.mash.35 no.10:93 O '55.
(Bibliography--Machinery) (MLRA 9:1)

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash. 35 no.11:91-93 N '55.
(MLRA 9:2)

1.TsNTB MTM.
(Bibliography--Machinery)

YELAGINA, Z. S.

AID P - 4275

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 33/33

Author : Yelagina, Z. S.

Title : New Books and Review of Foreign Journals

Periodical : Vest. mash., #1, p. 91-94, Ja 1956

Abstract : First part: list of briefly annotated books on "Construction Design" (13 titles) and "Technology of Machine Construction" (10 titles) published in 1955 by the State Scientific and Technical Publishing House on Machinery Literature (Mashgiz). The second part of the list briefly annotates articles published in non-Russian technical journals, (mostly American) on: 1) general problems of machine construction 2) construction design 3) Technology of machine construction.

Institution : None

Submitted : No date

Yelagina, Z. S.

AID P - 4300

Subject : USSR/Engineering

Card 1/2 Pub. 128 - 25/25

Author : Yelagina, Z. S.

Title : New Books, Dissertations and Review of Foreign Journals

Periodical : Vest. mash., #2, p. 87-92, F 1956

Abstract : New books published by the State Scientific and Technical Publishing House of Machine Building Literature (Mashgiz) are divided into: 1) general problems of construction design, 2) construction, design, and operation of machines, 3) history of technology, 4) organization and economics of production, and 5) annotation of books published by other publishing houses. The list of dissertations includes those which have been sent to this journal; they were written for the degree of Kandidat of technical sciences. The articles from foreign journals are divided into: 1) design and construction of machines, 2) metallurgical machine building 3) lifting and transport equipment.

AID P - 4300

Vest. mash., #2, p. 87-92, F 1956

Card 2/2 Pub. 128 - 25/25

4) technology of machine building 5) engineering materials, and 6) technical control.

Institution : None

Submitted : No date

YELAGINA, Z. S.

AID P - 4326

Subject : USSR/Engineering

Card 1/2 Pub. 128 - 26/26

Author : Yelagina, Z. S.

Title : Dissertations. New Books. Review of Foreign Literature.

Periodical : Vest. mash., #3, p. 89-93, Mr 1956

Abstract : List of dissertations for the degree of Kandidat of Technical Sciences, in the field of metal machining and machine tools. The list of new books is divided into the following groups: 1) Construction, calculation and operation of machines, 2) Technology of Machine-Building, 3) Organization and economy of production, 4) Safety technique. The review of Foreign literature is an annotated list of selected articles from non-Russian journals divided into the following groups: 1) Calculation and construction of machines, 2) Lifting and transportation equipment, 3) Technology of machine building.

AID P - 4502

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 29/29

Author : Yelagina, Z. S.

Title : Dissertations. New books. Review of Foreign Journals.

Periodical : Vest. mash., #4, p. 92-94, Ap 1956

Abstract : Two dissertations are listed for the degree of Candidate of Technical Sciences. New books are listed under two headings: 1) machine parts (6 books), and 2) construction, design, and operation of machines and mechanisms (7 books). The articles listed from Foreign journals are divided into: 1) Design and Construction of Machines (8 articles), 2) Metallurgical machine building (6 articles). Each title is annotated.

Institution : None

Submitted : No date

YELAGINA, Z. S.

AID P - 5097

Subject : USSR/Engineering

Card 1/1 Pub. 128 - 26/26

Author : Yelagina, Z. S.

Title : Review of foreign journals

Periodical : Vest. mash., 5, 93, My 1956

Abstract : List of briefly annotated articles published in non-Russian periodicals on the technology of machine building.

Institution : None

Submitted : No date

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash. 36 no.2:90-92 F '56. (MLRA 9:5)

1. TsNTB MTM.

(Bibliography--Machinery)

YELAGINA, Z.S.

Review of foreign periodicals. Vest. mash. 37 no.4:91-93 Ap '57. (MLRA 10:6)

1. TSentral'naya nauchno-tekhnicheskaya biblioteka Ministerstva tyazhelogo mashinostroyeniya.
(Bibliography--Machinery industry)

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash. 36 no.3:92-93 Mr '56. (MLRA 9:6)

1.TsNTB MTM.
(Bibliography--Machinery)

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash.36 no.4:93-94 Ap '56. (MLRA 9:7)

1.TsNTB Ministerstva tyazhelogo mashinostroyeniya.
(Bibliography--Machinery)

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash. 36 no.5:93 My '56. (MLRA 9:8)

1. TsNTB MTM.

(Bibliography--Machinery)

YELAGINA, Z.S.

Review of foreign periodicals. Vest. mash. 36 no.6:94 Je '56. (MLRA 9:10)

1. TsNTB Ministerstva tyazhelogo mashinostroyeniya.
(Bibliography--Machinery)

YELAGINA, Z.S.

Survey of foreign periodicals. Vest. mash. 36 no.8:92-93 '56. (MLRA 9:10)

1. TSentral'naya nauchno-tekhnicheskaya biblioteka Ministerstva tyazhelogo mashinostroyeniya.
(Bibliography--Mechanical engineering)

YELAGINA, Z.S.

Review of foreign periodicals. Vest.mash.37 no.1:93-94 Ja '57.
(MLRA 10:2)

1. TSentral'naya nauchno-tekhnicheskaya biblioteka Ministerstva tyazhelogo mashinostroyeniya.
(Bibliography--Machinery)